

# ARMOR



**AMBUSH! The Destruction of Groupe Mobile 100, June 24, 1954**



## Saddle Up... Tonight We Ride

“Every man thinks meanly of himself for not having been a soldier.” — *Samuel Johnson, 1778*

Two weeks after reporting to my first unit as a brand new second lieutenant I was located in the motor pool (no doubt seeking that elusive left-handed wrench) when I was told to report to the battalion XO’s office. Reviewing my recent screw-ups, I moved out smartly. Once inside the XO’s office, he informed me that, as the junior second lieutenant in the battalion, it was my duty to secure enough tables and chairs to accommodate the battalion’s officers and senior NCOs at the O Club for a beer call that afternoon. Relieved that I was not being reassigned as the battalion’s assistant S1, I departed.

The quartering party mission took a turn for the worse at the club where I discovered several other nervous lieutenants also scrambling to secure chairs and tables. Panic and chaos ensued, but I eventually corralled the requisite number of seats and guarded them until my battalion arrived. It was a different Army, in an earlier time.

Ask departing tankers or cavalrymen what they will miss most, and right after taking APFT and urinalysis tests, they’ll say the “the people and the camaraderie.” Truly, the Army’s greatest asset is its people, and this one constant is what most of us will miss when we leave. Yet, I wonder if we are failing to capitalize on this dynamic in the battle to retain young officers and NCOs?

“**Army Officers Say They’re Not Having Fun Anymore**” screams a headline from the *Washington Times* (25 Sep 00). The Rowan Scarborough column cited a report by a study group for the Army Training and Leader Development Panel, which polled over 3,000 officers. The survey notes that well over 70 percent of surveyed lieutenants, captains, and colonels agreed with the statement, “I am not having fun anymore.” Granted, “having fun” is not our *raison d’etre*, but it sure makes life worth living and hardships worth enduring.

Back in “Olden Times,” prior to the deglamorization of alcohol and before “O Clubs” became what we now call “Leader’s

Clubs” or “Community Clubs,” getting together for impromptu gatherings was a great deal of fun and a fairly regular event. Hail and farewells, for the most part, were also fun (I know this is hard to believe for many). Unfortunately, I fear we may have lost some of the esprit and camaraderie that made mounted warriors special, not to mention the fun. We should recapture this spirit.

No, heaven forbid, I’m not advocating the glamorization of demon rum or its consumption, but I wonder if the pendulum has swung too far in the balance between work and having fun. Informal gatherings designed to foster esprit provided most of us with a glimpse of our colleagues beyond the scope of the motor pool or weekly command “stab and jab” meetings. We got to see another side of the person who might be watching our flank.

Some will argue that we are so busy in today’s rapid fire Army that when you get that rare weekend free — or any time off, for that matter — socializing at the club is the last thing you want to do. I hear you, but consider sacrificing the time needed for the sixteenth revision of the PowerPoint briefing and take the shop out for a beverage. Who knows, you might learn something about one the guys on your team.

Perhaps we can make our young officers and NCOs feel like they are part of a team rather than interchangeable cogs in a big machine. Cogs will quit the battle well before a member of a close-knit team quits.

This talk of teams allows me to segue into the beret flap. I won’t get into the merits of the decision; haven’t we seen enough of that? Rather, I’d like to point out that some of the comments spewed forth in this fray border on ludicrous and are totally unprofessional. Serving officers have been quoted stating that they would not want to be the first pay clerk or mechanic to wear a black beret into a Ranger bar (please note that these tough-talking officers always remain anonymous). Agree, disagree but stay professional and when the time comes — move out and draw fire.

— D2

By Order of the Secretary of the Army:

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# ARMOR

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## Features

- 7 **Surrendering the Initiative: A Command Decision**  
by Major Kenneth L. Deal Jr. and Captain Paul T. Carter
- 11 **An Infantryman's Thoughts on Armor**  
by Major Robert Bateman
- 13 **Roll On! Army Selects LAV III Variants to Equip New Interim Brigades**
- 16 **Modern German Tank Development, 1956-2000**  
by Rolf Hilmes
- 22 **Death on the Highway: The Destruction of Groupement Mobile 100**  
by Captain Kirk A. Luedeke
- 30 **Light-Heavy Integration at the JRTC, Part 3 – Offensive Operations**  
by First Sergeant Paul E. Thompson Jr.
- 34 **WARSTEED 2000: Training in Korea's Unusual Terrain**  
by Captain Michael S. McCullough
- 38 **OPFOR Brigade Reconnaissance Company Techniques... and How to Defeat Them**  
by Captain Richard S. Roubal
- 41 **The Tank Accuracy Error Budget and Screening Policy**  
by Sergeant First Class David Cooley
- 44 **Maintenance Under Fire**  
by Captain J.M. Pierre
- 50 **Expert Armor Badge Under Study by OCOA**
- 51 **New Draft Manuals To Be Posted on the Web**
- Back Cover** **Sabra - Israeli Upgraded M60A3 Main Battle Tank Poster**  
Threat Branch, Directorate of Force Developments

## Departments

- 3 **Badges and Berets Stir the Readership (Letters Column)**
- 5 **Commander's Hatch**
- 6 **Driver's Seat**
- 33 **Letters**
- 52 **Reviews**

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## BADGES AND BERETS STIR THE READERSHIP

### On the Armor Badge Decision: "Button Up...Incoming!"

Dear Sir:

Upon reading the September-October issue of *ARMOR*, I was taken aback to discover that the incumbent Chief of Armor/CG of the Armor Center, of all people, is opposed to the Combat Armor Badge (CAB). He thinks it would be "divisive."

Far more divisive, in my opinion, is having a Combat Infantry Badge (CIB) and not having a CAB. The reason for this is elementary. Of all the sundry Army organizations, only two types have the mission, "To close with and destroy the enemy." They are the units that are basically either armor or infantry. But only one of the two has a special badge to recognize service in combat for their soldiers. That is blatantly unfair. The argument that the dismounted soldier is more vulnerable is without merit. Those who are mounted are much more lucrative targets and they attract much more enemy weaponry. Regardless, they are both elite troops and they both deserve being specially honored.

These designated heroes, the guys who are required to put themselves in harm's way to the greatest possible extent, are a relatively small part of the total force. Everyone else in the Army, and all those in the Air Force and Navy, are there to provide them support of some type.

Needless to say, you want the very best people to be in the vanguard. To get them, you must, of course, offer some incentives. Mostly, this is done in a low-cost way by the use of medals/ribbons, badges, and certain uniform items and accouterments. One of these potentially inexpensive motivators, which has long been sought by the armor community, is the CAB. In fact, it boggles the mind that this is still in the category of unfinished business. It does not speak well of me or any of the other senior armor officers of the last 50-plus years when it comes to taking care of our men.

Furthermore, the adoption of this badge should be only the first step in righting a longtime wrong. Much more needs to be done to reward the men who obligate themselves, "To close with and destroy the enemy." They are definitely a special breed who are entitled to special treatment. As a bare minimum, our leaders should be adamant about such things as getting at least 25 percent more pay for these soldier's soldiers (compared to others of the same rank or grade), establishing time-in-grade requirements for promotion for them which are significantly less than for all others, crediting them with 15 months for retirement for every

12 months they serve in such a unit at company/troop level, getting approval for the Expert Armor Badge (EAB) before it is studied to death, and having a special uniform for tankers when they are "tanking" that is at least of the quality and distinction of the ones pilots have when they are "piloting."

On top of these actions, the leaders need to ensure that these soldiers and units are glorified and that people are educated to the fact that "there are soldiers and there are soldiers." How else can you expect young men who enter service to choose an unmarketable MOS over a marketable one and a tough, dirty, and dangerous job over one that is comparatively a piece of cake? And if those in other units think these inducements are so great, they need only be advised that the line for signing up forms to the right.

I don't know if the engineers or others deserve a combat badge. That is up to their leaders to make a case for them if they feel it is warranted. I only know that no one is more worthy in this respect than tankers and cavalrymen (and that includes foot soldiers) and we need to aggressively point out all the reasons why until we are successful.

When the inevitable finally happens and the CAB is adopted, I hope the leadership at the time is also enlightened enough to make this authorization retroactive to when the CIB was approved. This would serve to recognize a lot of outstanding soldiers of former days, even though for many it would be on a posthumous basis. It would also be a fitting tribute to those who, over the years, have kept the faith and fought the good fight for such well-deserved recognition.

As some parting words, I would say that, even in a democratic society, an equalitarian army is an ineffective one, and striving for political correctness only muddies the waters.

To paraphrase Patrick Henry, "If these things be divisive, make the most of it."

COL THOMAS G. QUINN  
U.S. Army (Ret.)  
Radcliff, Ky.

### An Expert Armor Badge Would Probably Mean More

Dear Sir:

I am writing with regard to MG Bell's "Commander's Hatch" in the September-October 2000 issue. From my perspective, down in the ranks, I agree with MG Bell that a "Combat Armor Badge" is probably not a good idea. I say this as a soldier who would qualify if one were ever approved. I propose instead an Expert Armor Badge. I know sev-

eral Infantry soldiers with both the Combat Infantry Badge and Expert Infantry Badge. Almost to a man, they value the EIB more than the CIB.

I also know several medics with both the Expert Field Medical Badge and the Combat Medical Badge; they likewise place higher value on the EFMB. Many of these soldiers "earned" their respective "combat" badge while riding around the desert in a vehicle.

It also should be noted that we already have the "Wartime Service Patch" to denote service in a theater of war. Both "Expert" badges require the candidate to pass a grueling test of their physical and mental stamina, as well as mastery of the fundamentals of their profession. An Expert Armor Badge, with an appropriately rigorous test, would encourage Armor soldiers to excel and recognize those who achieve the higher standard. It would not be awarded solely on the basis of who was selected for which type of operation, but would be available to any Armor soldier who accepted the challenge. I firmly believe that a well managed Expert Armor Badge program would measurably increase the expertise and professionalism of the Armored force.

ROBB D. SHIMP  
SPC, CAARNG  
C/1-149 AR

### Armor Badge No More Divisive Than Current Combat Patches

Dear Sir:

It was with great interest that I read MG Bell's article on a Combat Armor Badge in the last issue of *ARMOR*. Being a long-time and ardent supporter of the badge, I respectfully disagree with MG Bell's position. In the spirit of open and frank dialogue which has long been the hallmark of this magazine, I would like to offer an alternative point of view to various arguments made in the article:

*"In my view, the establishment of the CAB could be divisive in the Armor force and create an impression and culture of 'haves and have-nots'."*

I hold this to be a false assumption. If this were the case, the argument would hold true for combat patches as well. In 11 years of service, I have not observed a "have/have-not" culture based on combat patches and, therefore, conclude that no such culture would arise because of the badge. Tankers without combat experience view the combat patch as just recognition of those with combat experience and nothing more (no value judgment on the soldier being based on the patch itself). A "have/have-not" culture DOES

exist in the sense that Armor soldiers around the force feel that their contributions on the modern day battlefield are not viewed to be important by those who would deny them the outward recognition currently accorded to the infantry, combat medics, and parachutists.

*"We stood by the principle that our entire Armor force was trained and ready to win the first battle of the next war, and the Desert Storm force did just that. We recognized that those who were not called forward were trained and ready and would have served with distinction had their units been sent into the combat zone."*

I agree with this premise wholeheartedly, yet, I fail to see what bearing this has on the institution of the badge.

*"We all vowed not to penalize those who did not serve in that war — just because they were not called on."*

Unfortunately, it appears that we are now penalizing those who did go (and all those who will go in the future), by refusing to support what they, and countless thousands before them in previous conflicts, rightfully earned.

*"Should we authorize a CAB for service with a unit in combat, while at the same time minimizing the role of a cavalry scout in Kosovo, an armor crewman in Bosnia or Korea, a drill sergeant at Fort Knox, or an AC/RC NCO at Fort McCoy, Wisconsin, because that is where the Army asked them to contribute to the Nation's national security effort?"*

I do not believe the institution of a combat skills badge for tankers and scouts would "minimize" anyone's role. The ensuing logic of this argument might well be illustrated in the following quotient: "recognizing combat service in a tank or a scout vehicle = minimizing the role of others." Fifty-seven years of the CIB, the CFMB and the "combat jump star" amongst infantrymen, medics, and parachutists would not bear this equation out. These individuals look at those badges in a wholly positive manner: as the outward recognition that "one of their own" successfully practiced his trade under fire. On the subject of badges in this paragraph, one could conclude — following the logic — that the drill sergeant badge or the recruiter badge serves to "minimize" the roles of those who have never been a recruiter or a drill sergeant?

*"In this regard, the establishment of the Armor Badge would likely result in a proliferation of badge proposals from the other branches."*

Quite frankly, I see nothing wrong with this potential consequence. If it serves to heighten morale and esprit within the force, then we should all get behind it! Currently we see fit to recognize the combat experience of only select few (to the obvious morale detriment of others — otherwise this topic would not arise "every few years").

*"This initiative could result in a landslide of badge requests, every one of which would state: 'Look what I have above my BDU pocket and what you don't have.' Is that really what we want in building cohesive warfighting teams?"*

Whether we realize it or not, this phenomenon already exists with the CIB. Having served as a tank platoon leader in a mechanized infantry brigade during Desert Storm, I observed the infantry happily slapping on their CIBs after the cease-fire while the tankers (who had borne the brunt of the direct-fire fight in the brigade) watched in frustrated silence. In this instance, it is time to think of the morale and welfare of Armor soldiers first, disregarding the potential consequences in other branches or the Army as a whole (i.e., the "landslide of badge requests"). We need to do right by our own and support that which "the field" has been asking for since the Second World War.

*"The staff here at the Armor Center continues to look at the potential for a competency-based evaluation akin to the Expert Infantry Badge."*

In my opinion, this would be a half-measure without a combat equivalent. The comparison will be made (and already has been made in this paragraph) to the EIB, which has a combat equivalent (along with the EFMB). Most soldiers will view any Armor competency badge that does not have a combat equivalent, as an attempt to ape the Infantry without really gaining the recognition currently enjoyed by that branch.

An issue of *ARMOR* published shortly after the Gulf War featured drawings of the proposed Combat Armor Badge and Expert Armor Badge on the back cover. At the time, it was widely expected that, after nearly 50 years, tankers and scouts of the United States Army were finally going to get official recognition for our battlefield contributions in the form of a uniform device. Nearly a decade has passed since those drawings appeared and the expectation remains unfulfilled. Given the long history associated with the debate surrounding the Combat Armor Badge and the repetitive nature of the request for such a device, I would respectfully request the Chief of Armor to reopen discussion on the issue.

RONALD J. BASHISTA  
MAJ, Armor  
Fort Hood, Texas

### **Combat Armor Recognition Would Build Better Morale**

Dear Sir:

I am writing to express my views on the subject of the Combat Armor Badge (CAB) and Expert Armor Badge (EAB). This is in reference to MG Bell's commentary on the subject in the September-October issue of *ARMOR*. I conducted an unofficial poll of my

National Guard armor battalion, 1-635 Armor, and received a unanimous opinion from those I approached — the CAB and EAB are timely and beneficial to the Armor force.

To put this issue in a broader context, it's no secret to any of us that military services over the ages have recognized the value of special recognition. I wish to address MG Bell's concern regarding a CAB as being divisive. I remember standing in company ranks after the Gulf war was over, hearing members of my company (B Co, 3/32 AR, 1st Cav) asking the same questions of COL Harmeyer (our battalion CO) that the scout SFC asked General Shinseki at the Armor Conference. Namely, when will the Army recognize the validity of the Combat Armor Badge for our branch?

Other Armed Forces (Israelis, Germans, and British to name a few) around the world have long realized the advantages of the *esprit de corps* factor in recognizing Armor as a unique and important part of the team. Berets, boots, devices, branch colors, and insignia are all aimed at boosting morale, unit pride, self-esteem, and the team spirit of soldiers. This isn't divisive; it's exactly what we need. Especially in today's generation, where memories of significant events in military and unit history are largely unknown. Traditions and protocols are vanishing, and combat arms is losing its identity. A comment I read recently in a veterans magazine put it well. To paraphrase, "After 20 years in the civilian world, a person can measure their success by the bank account, the Mercedes in the driveway, and the house in the country. You can read the history of a soldier by his uniform." It's a legacy to the next generation. Has anybody heard a soldier say, "I'm third-generation infantry, or armor, or scout, or engineer, or artillery" or "My Dad wore jump wings, or had the CIB, or was on a Sherman tank?"

Why do we allow soldiers who will never see an aircraft or a parachute again to attend Airborne School? OCS candidates who will branch in something not remotely connected to airborne operations? Because we recognize the value of personal pride in achieving the difficult, in being part of a special segment of military society. Which brings up another point. I hold five MOSs, and every Army MOS is unique and important. As professionals, we are aware that no military force could be successful without the efforts of the entire team. The logistical support in the Gulf was legendary and set records. The tooth couldn't do its job without the tail. Having said that, some of us made the decision to be trigger-pullers. We volunteered to kill people and break things with the knowledge that our personal risk increased in doing so. Why, then, is it so critical that we become an amorphous mass, without acknowledging this distinction?

*Continued on Page 50*

## What the Future Holds, and Who Will Stand and Fight?

by Major General B. B. Bell, Commanding General, U.S. Army Armor Center

Protecting America's national interests demands a robust set of land power options to face the uncertain operational environment of the 21st century. To meet these challenges, the Army and our Mounted Force have embarked on a modernization and transformation program that is unprecedented. As always, Armor Branch is on the cutting edge of efforts to hone the Army into a strategically responsive and dominant force at every point on the spectrum of operations. In this Commander's Hatch, I want to update you on the Year 2000 Mechanized Force Modernization Plan (MFMP), as well as describe a vision for the Future Combat System (FCS) that will arm the battalions and brigades that today's lieutenants and captains will command. Lastly, I want to address our future leadership opportunities and the immense potential for personal and professional growth being offered our company grade warriors as we transform the force in the exciting years ahead.

The first part of the Army's three-pronged Transformation Strategy (see the July/August 2000 Commander's Hatch) is the modernization of our current armor/mechanized force (sometimes referred to as the "Legacy Force"). The 2000 Mechanized Force Modernization Plan (MFMP) describes our proposed strategy for how the Mechanized Force should transform. This plan serves as a bridging strategy from today's Legacy Force, led by Abrams tanks and Bradley Fighting Vehicles, to tomorrow's Objective Force equipped with the Future Combat System. Armed with a rigorous analysis of the changing operational environment and a keen understanding of our new *FM 3.0 Operations* (draft), a super team of experts here at Fort Knox and within TRADOC formulated a strategy that ensures our current mechanized force can win our nation's wars and protect our vital national interests over the next 15-20 years as we bring on line our FCS-equipped Objective Force. Thorough battlefield functional area assessments yielded the following 12 priorities for our legacy force. While we realize that we must compete with other Army programs for prioritization and resources, we believe the fol-

lowing are essential to a dominant warfighting strategy over the next 15 to 20 years.

**1. Recapitalize through modernization upgrades (M1A2 SEP/M2A3) III Corps, consisting of three mechanized divisions and the 3rd ACR.**

**2. Fully digitize III Corps with three mechanized divisions and the 3rd ACR.**

*FM 3.0, Operations* (Draft) emphasizes decisive offensive operations and a viable strategic counterattack force. This requires that we focus key system upgrades and accelerated modernization efforts in a single corps — III Corps — as the first digitized corps (FDC). This force requires sufficient overmatch to bring armed conflict to a rapid conclusion on our terms. Units affected are 1st Cavalry Division, 4th Infantry Division, and 3rd Armored Cavalry Regiment for III Corps and the 3rd Infantry Division. The major weapon systems needed for these units are the M1A2 SEP, M2A3 Bradley, Crusader, M270A1 MLRS, AH-64D Pure, CH-47D, Grizzly, and Wolverine.

Key platform upgrades to the combined arms team are the M1A2 SEP and the M2A3 Bradley with information dominance through Integrated Combat Command and Control (IC<sup>3</sup>), 2nd Generation Forward Looking Infrared (2nd Gen FLIR) sights, Commander's Independent Thermal Viewer (CITV), and Far Target Locate (FTL) capability. Working within the combined arms team, these platforms provide the heavy force the combat power overmatch needed to conduct decisive warfighting while the Army transforms toward a full-spectrum capability.

**3. Develop and procure munitions that dominate the expanded close combat "Red Zone." (10-12 kilometers vice today's 3-4 km)**

Munitions are key to maintaining lethality overmatch. Failure to empower our force with appropriate munitions minimizes our investment in platform recapitalization and digitization. We require three new service rounds for the

Abrams tank to operate effectively in an expanded and more lethal "Red Zone:" 120mm Tank Extended Range Munitions (TERM), M829E3 APFSDS-T, and 120mm Canister.

*120mm Tank Extended Range Munition (TERM)*. Our Armor Force requires a Tank Extended Range Munition to destroy enemy vehicles beyond the range of conventional KE rounds. The TERM will be used both in Extended Line of Sight (ELOS) and Beyond Line of Sight (BLOS) modes to destroy high priority targets out to 8 to 10 kilometers. The tank will need to be able to fire autonomously using the current second-generation FLIR with IC<sup>3</sup> on the M1A2 SEP in a fire and forget mode. The requirement for TERM is in response to the changing nature of the tactical, close battle. The operational environment has caused a 240 percent increase in the area of responsibility (AOR) of the division and a corresponding need to enable the mechanized task force commander to dominate his expanded battlespace with an organic weapon system. TERM enables the commander to expand and dominate the close combat 10 to 12 kilometer "Red Zone," with precision munitions. The intent is to attack key threat systems (reconnaissance, command and control, and leader platforms) as they enter the "Red Zone" then destroy the remaining formation in a traditional close fight with direct-fire KE rounds. The bottom line is that we cannot afford to concede the first 7 kilometers of the extended "Red Zone." TERM will punish key threat platforms over that full distance and expose their formation to total destruction in the last 3 to 4 kilometers of closure.

*M829E3*. The M829E3 is the Army's next-generation 120mm kinetic energy armor-piercing tank round. The M829E3 is a fin-stabilized discarding sabot round designed to counter enemy explosive reactive armor advancements and improve probability of kill at extended ranges. We expect to field it in FY 03. Advancements in propulsion and penetration are key elements of this program.

*Continued on Page 48*

## EIA Offers Opportunity for Self-Development

by CSM Carl E. Christian, Command Sergeant Major, U.S. Army Armor Center

The Armor Force faces no greater challenge today than developing leaders and soldiers who can rethink traditional roles and adapt to new missions and organizations. As part of this challenge, we need to evaluate our efforts in terms of the three pillars of training — unit, institution, and self-development. We have already established a strong foundation for unit and institutional training. We will continue to build on it with initiatives like the Mounted Training Strategy and resident professional courses with distance learning components.

However, we must improve in the area of self-development. It is not enough to encourage soldiers to improve themselves on their own initiative. We must produce and promote self-development programs that “grow” Armor and Cavalry soldiers who can meet the demands of the changing Armor Force. The tools for building and maintaining an effective self-development strategy are already in place: the Excellence in Armor (EIA) Program; the Tank Commander Competency Test – Level II (TCCT II); and the Cavalry Scout Commander Competency Test – Level II (SCCT II).

The goals of the EIA Program are to identify and develop intelligent, highly motivated Armor and Cavalry soldiers whose performance is consistently outstanding; encourage and facilitate their career progression and growth into non-commissioned leaders; and provide incentives which will lead to retention of these high quality NCOs. EIA is both an Active and Reserve Component program. Soldiers can be nominated for the EIA program during the One Station Unit Training (OSUT) at Fort Knox or while stationed in their units.

EIA is a win-win program with unlimited potential. It benefits the total Armor Force by recognizing superior performance and potential, increasing soldier motivation, and identifying soldiers that we need to retain. The EIA Program benefits enrolled soldiers by giving them an edge when it comes to early promotion and early enrollment in PLDC and BNCOC. In FY 99, 61 per-

cent of SFC/E-7 board selectees were EIA members. That’s a great figure, though we need to ensure that commanders continue to give EIA soldiers special consideration for early promotion and NCOES if they consistently maintain their high standards. This will send a message to other soldiers that demonstrated performance and potential count more for promotion than just time in grade.

Soldiers enrolled in the EIA Program can also earn 50 additional promotion points, in accordance with *AR 600-200*, by passing the SCCT-II or TCCT-II. We will soon complete the first updates of those tests in over a decade. The revisions were long overdue, but we’ve taken the opportunity to significantly improve the tests. The new scenario-based SCCT-II will consist of both multiple-choice and open-ended questions on skill level 3 tasks and subject areas. Each test booklet will contain an OPORD and overlay that students will need to analyze to answer some of the questions. As in the past, SCCT-II and TCCT-II candidates will be allowed to take the test one time only on a pass/fail basis. The prerequisites for taking the test are: (1) enrollment in EIA; (2) must be a promotable sergeant; (3) recommendation from the battalion/squadron commander. We will field the new SCCT-II in early 2001, with the new TCCT-II to follow soon after.

Concurrently, we are exploring ways to make the next-generation SCCT-II and TCCT-II even better evaluation tools. We recently designed a prototype CD version of the SCCT-II that contains video footage of a platoon leader reading the OPORD. As soldiers take the test, they can view an overlay on their PC screen as they listen to the order. This approach more closely approximates the field experience, and that’s what we want to test and measure. Ultimately, we want to put the test on a secure internet web site. That will enable us to update it quickly and electronically distribute the new version to the field.

With the demise of the Self-Development Test (SDT), the SCCT-II and TCCT-II rank among the Army’s most effective ways to formally measure a soldier’s knowledge of his MOS tasks. From the soldier’s perspective, the tests provide a means for earning bonus promotion points for E5 sergeants in EIA. So there’s a lot of upside to the SCCT-II and the TCCT-II. And yet, the number of soldiers taking the tests is very low. Certainly, the Armor Force needs to market the tests better, but we can increase their usage in other ways, too.

We’re looking at tying the SCCT-II and TCCT-II more closely to the EIA Program. Right now, a soldier in EIA does not have to take the Level II test. That doesn’t make sense. An EIA soldier should be required to pass the SCCT-II or TCCT-II by the time he makes SFC. If he does not, then maybe he should be “dis-enrolled” from the EIA Program. This is one way we can evaluate EIA soldiers throughout their careers to measure whether they reached the potential they first exhibited when enrolled in the program. Another way might be to develop SCCT-III and TCCT-III gates for senior EIA soldiers. We don’t need to recreate the SDT; we do need to evaluate the effectiveness of self-development programs like EIA as soldiers progress through their careers.

With the SCCT-II and TCCT-II, and the EIA Program, the Armor Force has started building a strong foundation for promoting self-development. We need to continue to improve these programs as we’re doing now with the SCCT-II. We also need to promote these programs to our young soldiers and actively seek out those with the technical, tactical, and leadership potential to lead the Army of tomorrow. To learn more about any of these programs I’ve described, you can contact the Office, Chief of Armor, at DSN 464-TANK. I challenge you all to take an active role in the self-development of the soldiers under your command.

**“TODAY IS THE BEST DAY  
TO BE A SOLDIER!”**



# Surrendering the Initiative: A Command Decision

Predicting what the enemy is going to do makes our commanders reactive, not bold

by Major Kenneth L. Deal Jr. and Captain Paul T. Carter

Perhaps the most valuable training opportunities available to our land forces are the three combat training centers (CTCs).<sup>1</sup> They are national military resources worthy of every attention. Each training center is built upon five pillars: adequate land, professional observer/controllers, instrumentation, a world-class opposing force, and a robust base support structure. The CTCs are a crucible where doctrine is developed and tested, providing unequalled feedback about the doctrine's validity and application.

Current training trends from our CTCs<sup>2</sup> suggest problems exist in the way we execute portions of our Army-based Military Decision-Making Process (MDMP).<sup>3</sup> Specifically, units place too much reliance on expected enemy actions during the MDMP, which makes the decision-making process more reactive. Does the way we practice our doctrine lead commanders to believe enemy actions and intent can be predicted with precision? Predicting an enemy commander's most likely course of action (COA) is highly speculative at best, yet maneuver commanders rely heavily on the intelligence officer's (S2) predictions of enemy tactical actions, rather than the commander forming his own estimate, based on his maneuver experience, knowledge, and training, that focuses on achieving his own mission.

The mission statement, the most important information in the operations order (OPORD), follows the enemy situation. By placing the enemy first in the OPORD, we focus our efforts on *reaction to* the enemy, instead of *action against* the enemy. When does the enemy's mission and objectives, if ever, take precedence over our own? Have we become reactive to enemy actions through the CTC experience?

The training centers have developed highly trained opposing forces (OPFOR) that maintain a unique understanding of friendly force units. The OPFOR's advantages typically cause friendly units to become largely reactive in the way they fight. Friendly units fight the CTC battle as a cohesive task force team only once, while the OPFOR fights dozens of times per year, on their own terrain. The limited land available at the CTCs also forces the OPFOR to become somewhat predictable. Land is a resource not likely to significantly increase,<sup>4</sup> which limits the CTCs to executing a finite series of exercises. Battles or battle sequences are fairly constant and often repeat themselves, and terrain and the effects of terrain remain constant. After numerous battles, the OPFOR will settle into a standard process for attacking or defending a specific piece of terrain.

At the NTC, for example, the OPFOR repeatedly attacks through the Brown-Debnam terrain complex. This fight occurs during every National Training Center (NTC) rotation, year after year, making Brown-Debnam perhaps the most fought-over piece of terrain in the world. Consequently, the OPFOR knows the terrain very well.

Furthermore, the OPFOR are U.S. soldiers, and therefore share the same cultural biases, thought processes, institutional training, and ultimately similar conceptions of warfighting as the friendly unit.

The OPFOR's advantages encourage many friendly units to become reactive in their fight. This is certainly not an argument against the value of the CTCs. But commanders should realize that a "reactive dynamic" can permeate the command when fighting the OPFOR. This should force commanders to take a fresh look at the way they plan their tactical warfighting operations.

In the attack, the OPFOR uses a battlefield framework of see, shape, strike, and shield. This translates into establishing communications and reconnaissance, protecting the force on the approach, isolating the point of penetration, creating a penetration with fire and maneuver, exploiting the penetration, and blocking the enemy reserves. Reacting to these enemy actions permeates our mission planning and allows the enemy to make decisions for us. Thus we surrender the initiative before the battle begins. Battles become a matter of stopping the enemy from accomplishing his objectives rather than setting the conditions for us to accomplish ours. General U.S. Grant put it best by saying:

"I am heartily tired of hearing what Lee is going to do. Some of you always seem to think he is going to turn a double somersault and land on our rear and on both our flanks at the same time. Go back to your command and try to think *what we are going to do ourselves, instead of what Lee is going to do.*"<sup>5</sup> (author's italics)

The process that commanders and staffs use to "examine a battlefield situation and reach logical decisions"<sup>6</sup> is the MDMP. A continual seven-step process, MDMP never really ends but culminates once the objective is secured or the unit is issued another mission. The process is a lock-step method of defining our, and the enemy's, objectives and allocating resources to achieve our ends. The staff officers construct a seemingly endless stream of estimates that build upon each other as battlefield influences change. But the estimates all have one thing in common. They begin with receipt (or prior to receipt) of the mission, and are not expected to reach an acceptable level of refinement until after the course of action analysis (wargame). That is, except for the S2's estimate. This estimate is expected to have high resolution almost immediately, and is included as part of the mission analysis briefing to the commander. While this is doable given a somewhat predictable CTC enemy, it is by no means realistic in a fluid combat or rapid deployment environment.

The mission analysis concludes with the staff delivering a briefing to the commander that provides him with the specified and implied tasks inherent in the mission. The S3 operations officer, however, does not begin the briefing. The first briefer is the S2, who provides the commander the expected battle effects of weather and terrain. At battalion level, the S2 is normally a junior officer with little or no maneuver experience. He is expected to be an expert in friendly and enemy doctrine in order to provide predictive analysis. Suddenly, the S2 has transitioned from his objective, scientifically-based terrain and weather analysis into a predictive role, assessing the enemy's most likely and most dangerous COA. The S2's

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product now drives the planning process, because commanders and staff frequently weight the main effort based on a predicted most likely enemy COA. Overreliance on the S2's product is compounded further when the MDMP process is time-constrained; the S2 may have only 30-50 minutes to prepare an enemy estimate. So, at the conclusion of the briefing, the commander issues guidance to his staff on fighting the battle, based in large part on the S2's prediction of the enemy's most likely COA.

The military observer asks — how is it that the S2, prior to even establishing a solid reconnaissance plan, can predict the enemy's most likely COA? Certainly the S2 must develop *possible* enemy courses of action, but can he really *predict the most likely*? Even the S2 "bible," *Field Manual (FM) 34-130 Intelligence Preparation of the Battlefield (IPB)* states "History repeatedly demonstrates that those who predict only one COA are often surprised by the enemy."<sup>7</sup> Yet, at our CTCs, commanders repeatedly weight the friendly effort based on the enemy's most likely COA, as predicted by the S2. The commander assumes significant risk in passing the initiative to the enemy when his staff develops a plan linked so decisively to supposed enemy actions. The question remains, why is the friendly effort weighted so heavily on the S2's intelligence estimate, just one of many factors affecting the battle environment, instead of the commander's estimate?

These questions strike at the heart of our doctrine and military decision-making process. Even though CTC "train-ups" are usually a unit's number one training priority, the same deficiencies emerge year in and year out in the after-action reviews of units training at our CTCs. These include S2s failing to predict the enemy's intentions.<sup>8</sup> It's as if we never learn from our mistakes. The first problem is that the S2 is required to predict the enemy's most likely and most dangerous COA early in the process, presumably so the staff can develop friendly courses of action. But perhaps the relevant question is not, "Why can't the S2 predict the enemy's intentions," but, "Can we really predict the enemy's intentions?" Probably not, since even at the CTCs, where enemy actions are generally finite, S2s have difficulty predicting enemy actions with any recurring accuracy.

This dichotomy has created a debate in the military intelligence community between two very unique approaches to the intelligence analytical methodology, the so-called "capabilities" versus "intentions" schools of thought.<sup>9</sup> The capabilities school of thought says the S2 should provide an estimate of what the enemy *could* do to keep us from accomplishing our mission. Conversely, the intentions school says the S2 must determine what the enemy *will* do. The capabilities school asserts it makes more sense for the S2 to present the commander with a set of enemy COAs. These COAs outline the courses the enemy *could* adopt to thwart our plans, rather than engaging in the highly speculative enterprise of predicting enemy COAs. It further asserts that the commander, not the S2, is the senior intelligence officer in the command, and that the commander's estimate should form the basis of all planning. Intelligence is just one of many factors on the battlefield, and when the S2 provides the commander an enemy capabilities briefing, the commander must weigh intelligence with a myriad of other factors and form his own estimate. Additionally, emphasizing what the enemy *could* do to thwart friendly mission accomplishment allows units to focus more on the friendly mission, while emphasizing what the enemy *will* do tends to make units more reactive. Finally, by determining what the enemy could do while remaining focused on our mission forces the staff to create a highly flexible plan with realis-

tic, executable branches and sequels throughout the battlespace. This is conducive to mission-oriented "task/purpose" instructions to subordinates while maximizing "reconnaissance pull."

History is replete with examples of experienced commanders, much less S2s, who could not predict what their opponent would do, supporting the capabilities approach. Could General Hancock have predicted that Robert E. Lee would direct Pickett to charge on July 3, 1863? Napoleon mused about how, at the battle of Waterloo, Wellington did the completely unexpected, yet both commanders knew their opponents well! Napoleon speaking of "the grand knowledge of warfare" stated, "There are no precise, determinate rules. Everything depends upon...a thousand circumstances which are never twice the same."<sup>10</sup> General Patton wrote that battles were "simply an agglomeration of numerous small actions and practically never develop according to preconceived notions."<sup>11</sup>

According to *FM 34-130*, the IPB manual, in order to predict threat COAs, the S2 must have, among other things, "identified every characteristic of the battlefield environment that might affect the operation (step 1);" next, "identified the opportunities and constraints the battlefield environment offers to threat and friendly forces (step 2)"; and finally, "thoroughly considered what the threat is capable of and what he prefers to do in like situations (step 3)."<sup>12</sup> The noted military writer Colonel DuPuy identified 73 variables impacting the outcome of battles, but ten of them, including *intelligence*, were intangible.<sup>13</sup> U.S. Army Major (Ret.) Forrest Davis wrote that for the S2 to meet the first requirement in predicting the enemy's most likely COA, he would have to "comprehend at least the majority of DuPuy's variables, collect all the appropriate information, and place them in relational balance to each other."<sup>14</sup> This is a daunting task, to say the least.

Perhaps equally daunting is step 2, which identifies "the opportunities and constraints the environment offers to both friendly and enemy forces." Said another way, this requires the S2 and his staff to thoroughly understand the seven battlefield operating systems (BOS) of both the enemy and friendly forces, their current and expected relative combat power at each phase of the conflict, and the terrain and weather effects on soldiers, weapons systems, and each BOS. At a minimum, the S2 must be an experiential expert on friendly and enemy weapons and weapon support systems.

Step 3, to "thoroughly consider what the threat is capable of and what he prefers to do in like situations," is the most difficult task. Since some of the greatest generals the world has ever known have failed this task, it is probably asking too much for an intelligence officer, a captain or major, to master this step. Essentially, the S2 must "become" the enemy commander, placing the totality of the commander's varied, life-long experiences into a comprehensible mental model, then think, feel, and decide like an experienced, senior-ranked, foreign maneuver commander.

Ultimately, the variables affecting how two opponents will act and react in a battle to the death are too complex for any analytical model, or even human comprehension. Richard Fox, in his archaeology and analysis of the Custer battlefield, uses historical examples to illustrate that battles are not precise models. Rather, they are extremely confusing experiences. Order is difficult to maintain. Events are often shaped by accident, and tactical disintegration can occur.<sup>15</sup> Requiring an S2 to definitively state the enemy's most likely COA and most dangerous COA, based on the previous steps, is nothing less than an extremely speculative enterprise.

A closer look at the capabilities versus intentions schools of thought reveals what may be the real problem, the apparent “disconnect” between the MI capstone manual, *FM 34-1 Intelligence and Electronic Warfare (IEW)*, and *FM 34-130 Intelligence Preparation of the Battlefield (IPB) FM*. The IPB manual teaches S2s to predict threat COAs, rather than directing S2s to predict the enemy’s *most likely* and *most dangerous* courses of action in the absence of reconnaissance. The task, “to determine the enemy’s most likely COA,” is found in *FM 34-1* and referenced only once, stating, “Intelligence should tell the commander his... (the enemy’s) most likely course of action.”<sup>16</sup> The IPB manual, *FM 34-130*, does not teach S2s to predict a “most likely enemy COA,” and does not provide any tactics, techniques, and procedures on how to do so. Rather, it teaches predicting likely COAs and their order of probability.

Unfortunately, we follow the IEW manual, which references only once that S2s should determine the most likely enemy COA. Now, certainly when an S2 ranks enemy COAs in order of probability, there will always be a most likely. But the problem is that we weight the enemy’s most likely COA in our MDMP to the exclusion of the other possible enemy COAs. In the book *The Defence of Duffers Drift*, the Boer “S2” (used as an example in the IPB manual) didn’t present his commander a most likely COA, but rather four enemy COAs “in order of probability as I gave them.”<sup>17</sup> There is a significant difference in the degree and manner of emphasis between predicting a most likely enemy COA early in the planning process and allowing it to drive our planning, versus identifying four enemy COAs which can only be determined by thorough reconnaissance.

The IPB manual states that the S2 should prepare “event templates and matrices that focus intelligence collection on identifying which COA the threat will execute.”<sup>18</sup> We seem to ignore the IPB manual’s directive to not “overlook the less likely *but still viable* (author’s italics) COAs. Do not risk surprise by failing to consider all feasible COAs... Consider the following possibilities that might lead to ‘wildcard’ COAs.”<sup>19</sup> Rarely, if ever, do S2s articulate ‘wildcard’ COA factors in the estimate. And if they do, that COA normally correlates to the “throw-away” friendly COA.

Further, we expect the S2 to tell us up front, in mission analysis, the enemy’s most dangerous COA, before we even develop our own friendly COA. *FM 34-130* does not address enemy most dangerous courses of action. The S2 could say, “The enemy’s most dangerous COA is to air assault a battalion on top of our BSA” and be technically correct, but what does that really tell the commander?

The S2 could predict any number of suitable enemy COAs which could be considered very dangerous. In actuality, the most dangerous enemy COA should be the one that makes us the most vulnerable when executing our own COA. Thus, it is impossible to predict *prior* to friendly COA development. Ultimately the enemy’s most dangerous COA is that which disrupts the *friendly* center of gravity when executing our COA. Therefore the enemy’s most dangerous COA should not be identified until late in the MDMP, at the later stages of the course of action analysis (wargame). In fact, the enemy’s most dangerous COA may be a branch or sequel rather than a “stand-alone” COA.

Therefore, we question not only the S2’s capability to predict an enemy’s most likely COA during mission analysis, but why one sentence of doctrine from *FM 34-1* drives the requirement for an S2 to do so. Worse, we require S2s to predict the enemy’s most dangerous COA, in the absence of written doc-

trine on how to do so. Why is it that we force our S2s to conduct intelligence activities not supported by doctrine in the IPB “bible,” *FM 34-130*?

Early on in the planning process, there certainly has to be an intelligence focus, and S2s have an obligation to provide the commander probable enemy COAs, including objectives, and potential schemes of maneuver. But it is unreasonable to expect a captain or major S2, many of whom are not well founded in friendly maneuver doctrine, to predict during mission analysis the most likely COA with little more than a higher headquarters intelligence estimate. Ultimately, the commander must rely on his own insight and experience to determine the validity of enemy COAs and which he thinks are the most likely.

If the S2 has constructed a robust reconnaissance plan to provide clear indications and early warning,<sup>20</sup> he can evaluate incoming reports and provide some degree of predictive analysis. IPB is clear that in order to discern what COA the enemy has adopted, detailed, multi-source reconnaissance is required. In fact, the IPB manual says we must “identify those areas and activities that, *when observed* (author’s italics), will discern which COA the enemy has adopted.”<sup>21</sup> The Boer “S2” even stated that the four COAs he thought the enemy would take were merely guesses: “We need to conduct reconnaissance of the river bed and the Kraal in order to find out which of these courses of action he has chosen.”<sup>22</sup> Note that the entire Boer plan was in no way hinged on a speculative most likely COA. Rather, only through thorough reconnaissance would the COA be determined.

While predictive intelligence may be what today’s commanders expect, they must understand it is a very risky and highly speculative enterprise. It is even riskier, and perhaps in no way practical, to expect the S2 to predict the enemy’s most likely COA, especially in the early stages of MDMP. Commanders must take more “ownership” in assessing enemy intentions, place greater emphasis on friendly mission accomplishment, and form their own estimate. BG Richard Quirk, G2 of the 24th Infantry Division (Mechanized) during Desert Storm, wrote that while Army doctrine states within a division the G2 is the senior intelligence officer, the doctrine is wrong. “It is the commander who is the senior intelligence officer in any command.”<sup>23</sup> BG Quirk reminded himself of COL E.C. Townsend’s dictum that, “In any command, there should only be one estimate – the Commander’s Estimate.” Further, that, “The Intelligence Officer should not be permitted to publish his personal opinions to a command.”<sup>24</sup>

COL Townsend’s and BG Quirk’s assertions are supported in current Army doctrine. *FM 100-5 Operations* clearly states that intelligence is the commander’s responsibility.<sup>25</sup> Intelligence failures at our CTCs begin with the commander not identifying his intelligence needs, and his failure to provide detailed, focused guidance to the S2. Therefore, commanders fail to form a viable, relevant command estimate.

*FM 100-5* states “The commander drives the intelligence effort.” This clearly means the commander, not the S2, is responsible for the intelligence effort. Next, that “He must ask the right questions and focus the intelligence work.” Thus, the commander must provide specific guidance to his S2 *defining his intelligence needs*. Additionally, “He must know the enemy; the commander’s personal involvement and knowledge have no substitute.” This implies the commander as the senior intelligence officer in the command. If his guidance to the S2 is focused and clear, the S2’s estimate will remain relevant throughout mission planning. Finally, “He helps his intelli-

gence system work effectively by stating his intent and decisively designating his priority intelligence requirements.” Ultimately, the intelligence system belongs to the commander, not the S2.

To remedy current tactical trends, we must radically change our thinking. First, change the format of the five paragraph OPORD and place the friendly mission statement, commander’s intent, and the task/purpose for subordinate units, prior to the enemy situation.<sup>26</sup> This will reinforce to commanders and staff that the primary focus of our efforts should be our mission, not what the enemy is expected to do, and will consequently serve to restrict a reactive dynamic. Second, understand that predicting enemy actions and intentions is highly speculative and cannot even begin to be accomplished until thorough reconnaissance is conducted. Because the commander drives the intelligence effort, he is responsible for training (through the chief of staff or XO) the S2 as a functional member of the battle staff. The S2’s success or failure is a direct result of the commander’s action or inaction. Third, commanders must form their own estimate, based in part on the enemy situation, and clearly articulate to the S2 what intelligence he requires to form the command estimate. It is difficult (and in a 96-hour deployable Army, nearly impossible) to predict what a real-world enemy will do, thus the S2’s estimate on the enemy’s intent should not drive the mission process. The commander must understand that Army doctrine clearly establishes intelligence as his responsibility, and he not only relinquishes significant authority by overreliance on an S2 estimate, but assumes significant mission risk if he does so.

The U.S. Army is highly agile, technologically advanced, and remarkably lethal. The ability of our maneuver formations to close with and destroy the enemy is unsurpassed among modern armies. The resources the U.S. Army brings to the fight today is unequalled in human history. We will certainly get there with “the fustest with the mostest,” but all this is moot if we keep allowing ourselves to surrender the initiative.

## Notes

<sup>1</sup>The three are: The National Training Center at Ft. Irwin, Calif., The Joint Readiness Training Center at Ft. Polk, La., and the Combat Maneuver Training Center at Hohenfels, Germany.

<sup>2</sup>The Center for Lessons Learned (CALL) “CTC Trends,” published quarterly, continually points to recurring deficiencies in the S2’s Enemy Estimate.

<sup>3</sup>MDMP is a model found in *FM 101-5 Staff Organization and Operations* consisting of Receipt of Mission, Mission Analysis, Course of Action Development, Course of Action Analysis, Course of Action Comparison, Course of Action Approval, and Orders Production.

<sup>4</sup>NTC has been negotiating for land to expand the battlespace.

<sup>5</sup>Shelby Foote, quoted in the PBS Series *The Civil War*, and Horace Porter’s, *Campaigning with Grant*, 1897.

<sup>6</sup>*FM 101-5, Staff Organization and Operations*, p. 5-1

<sup>7</sup>*FM 34-130, Intelligence Preparation of the Battlefield*, p. 2-43

<sup>8</sup>Recurring deficiencies are even acknowledged by Military Intelligence professionals. LTC Mike Flynn, formerly senior observer/controller for intelligence at the Joint Readiness Training Center and G2 for the 82nd Airborne Division, states, “Too often, S2s are not able to produce this predictive intelligence for a number of reasons.” “Intelligence Must Drive Operations: How Intelligence Can Clear the Fog of War,” *Military Intelligence Professional Bulletin (MIPB)*, Jan-Mar 2000.

<sup>9</sup>Arguments outlined in Colonel Elias Townsend’s, *Risk: The Key to Combat Intelligence*, (The Military Service Publishing Company, Harrisburg Pa., 1955).

<sup>10</sup>Herold, J. Christopher, editor and translator of *The Mind of Napoleon, A Selection from His Written and Spoken Words*, Columbia University Press, N.Y., 1955, p. 223.

<sup>11</sup>Blumenson, Martin, *The Patton Papers, 1940-1945*, Houghton, Mifflin, and Co., Boston, 1957, p. 436.

<sup>12</sup>*FM 34-130*, p. 1-3

<sup>13</sup>Colonel Trevor N. Dupuy, *Numbers, Predictions, and War*, Hero Books, Fairfax, Va., 1985, p. 33.

<sup>14</sup>Major Forrest L. Davis, *Predictive Intelligence: Do We Really Need It?*, *MIPB*, Apr-Jun 1997. I have borrowed heavily from Major Davis’s arguments.

<sup>15</sup>Fox, Richard A., *Archaeology, History, and Custer’s Last Battle*, University of Oklahoma Press, 1993. Fox cites other studies, as well as the archaeology of the Custer battlefield, to show the unpredictability of battle, as well as how units can fall victim to tactical disintegration. A few of the books he cites include Du Picq, A., *Battle Studies*, Military Service Publishing Company, 1946; Keegan, J., *The Face of Battle*, Biddles Publishing, 1978; Marshal, S.L.A., *Men Against Fire*, Peter Smith Publishing, 1978.

<sup>16</sup>*FM 34-1, Intelligence and Electronic Warfare*, p. 2-7.

<sup>17</sup>*FM 34-130*, p. 2-39.

<sup>18</sup>*Ibid.*, p. 1-3.

<sup>19</sup>*Ibid.*, p. 2-43.

<sup>20</sup>*FM 34-1*, Indications and Early Warning is one of six Primary Intelligence Tasks, the other five being Perform IPB, Perform Situation Development, Perform Target Development and Support to Targeting, Support Force Protection, and Perform Battle Damage Assessment, p. 2-8.

<sup>21</sup>*FM 34-130*, p. 2-39.

<sup>22</sup>*Ibid.*, p. 2-39.

<sup>23</sup>Colonel Richard J. Quirk III, “Intelligence for the Division – A G2 Perspective,” U.S. Army War College, p. 165.

<sup>24</sup>*Ibid.*, quoting pg. 29 of Colonel Townsend’s work.

<sup>25</sup>*FM 100-5, Operations*, p. 2-12.

<sup>26</sup>Perhaps two OPORD formats are required. One for the offense that places friendly forces, mission, intent and task/purpose first, and one for the defense, which states the friendly forces and mission, followed by the enemy situation, and then the friendly force intent and task/purpose.

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# An Infantryman's Thoughts on Armor

by Major Robert Bateman

This is not so much an article as it is an open letter from a grunt to his brothers-in-arms. It is not an attack. It is not a prescription. It is most certainly not the "word" from somewhere on high, although it agrees with some of the ideas coming from the top recently. In fact, as the all-time record holder for "authors that annoyed the readership," I may well be considered just about the antithesis of "official" for the Armor community.<sup>1</sup> Think of me as your token grunt. In other words, these are the thoughts of somebody that cares, a lot, about our collective future. It is supporting fire for some, such as SSG Morris (see "Letters," September-October 2000) who are among the very few wholeheartedly working to get Armor into the fight on the ground.

Surprising absolutely no one, there has been a great deal of gnashing of teeth lately over the Transformation Force concept started by General Shinseki. Sure, the Chief of Armor has officially proclaimed that you all heartily agree with the transformation. You won't find an O-6 anywhere that will publicly disagree with the concept. That is "corporate-ness" in action.

This is important because Fort Knox is the center of the world for the armored community. Because of that, and because the branch is "officially" supporting transformation, the change is rolling along. But we've all heard the whispering and complaining in other channels. This grumbling is entirely unofficial, but we all know that it is on that front that General Shinseki's gamble on transformation must be won.

Transformation is no easy feat. For half a decade I have been trying to understand how we (the U.S. Army) blew it so badly during the period between World War One and Two, an era with striking similarities to our current situation.<sup>2</sup> What emerges from this research is a realization that the toughest part of getting an army to change is convincing the grognards.<sup>3</sup> Getting the water cooler crowd to go along with an idea is the toughest part. For lack of a better term, let's call it "institutional inertia." This is the killer. It was what kept armor under the thumb of the infantry from 1920 to 1940, and it may be what keeps General Shinseki's ideas from going the distance. Why?



Let's just say that you, as a branch, are not going along with the idea 100 percent. If you do not deal with this quickly, and quit your unofficial challenging of the idea, you are going to be responsible to future generations. You hold the power to knock the contractors into line; we all know it, so do it. Otherwise we are heading for a train-wreck at the Congressional level. You know who will pay for that if it happens? Won't be you, it'll be me and mine in the infantry. Do you know how? In blood, most likely. Because we will be there, wherever "there" is, and you won't be, just when we need you most. Let me explain why.

## ON EQUIPMENT

Most members of the Armor community will not deny that the M1 (any generation) is miserable in three areas. It is tough to deploy. It is a pain to maintain (compared to, say, a HMMWV) It is a royal pain to logistically support. (Can you say "fuel consumption," lieutenant?) Fine, we all agree on that. These are three really good reasons to change. But some of you still resist. You contend that there are some important issues to be addressed, issues stemming from the

famous triad of armor, "Protection, Mobility, Firepower." OK, let me address the most common of these that I have heard from my armored brethren.

**ARMOR:** First, you have to realize that your "protection" means jack\*\*\*\* to me as an infantry soldier. Are you going to look me in the face, me with my 120-pound load as I personally carry a Javelin round and sight from point A to point B on foot, and tell me that you need more "protection" than I am entitled to in order to place your tank-killing system on the battlefield?

Here I am, wearing my MK-1 BDU system (armor level 0 for you Dungeons and Dragons fans), and I am on the battlefield, and you want me to feel sorry for you because you don't have enough armor when you have the equivalent of 10 mm, or 50 mm of rolled steel?! (Obviously, that's a lowball. The point is that I have 0.0 mm, and therefore have little sympathy.) Forget it. What I want is you there with me, not on a boat 3,000 miles away. That is my number one.

Your job is to be on the battlefield. If having armor stops you, you must discard that armor until you reach the point that you can be on that battlefield again.

Basically, although I know most of you know this at some fundamental level, your primary purpose is not to survive, it is to accomplish the mission. Just like me. Survival, at the nasty end of the spear, is a "nice to have" that slips in right behind "mission accomplishment." Until you are more vulnerable than I am with my BDU armor, you should be thinking about other things first. Let other people worry about "Force Protection." The armor community should focus on "mission accomplishment."

**FIREPOWER:** Specifically on design. Aim upwards. Not in technology, I mean in elevation. Forget range for a moment. Personally, I don't care if you can accurately ID and hit a target at 5 km, or 15 km for that matter. Let aviation or artillery get into that "precision munitions" bull. More often than not, I really don't care how big your gun is. I am only interested in "terminal effects." I want you to be able to hit that fourth-floor window 250 meters away in a way that the Russians quite obviously could not in Grozny.

In short, this is another good reason to think about me and mine, the infantry. Of the tank kills in the past nine years, my bet would be that 95 percent of them were infantry-on-armor, not armor-on-armor.<sup>4</sup> Think about that, my brothers-in-arms. You can bitch and whine all you want that armor "shouldn't be used in cities," but you know what?...if they put **my** "fourth point of contact" in a city, you can bet I am personally going to be screaming for armored support. I need you.

Without you and your armor, more of my boys will die. Given that reality, how long do you suppose we will stick to the aspects of our doctrine that suggest that we should "bypass population centers whenever possible," huh? How long? (Hint: How long did we stay in the hinterlands of Somalia? Where are we concentrated in Kosovo? Etc.)

Your engine power allows you to carry a lot of equipment, so make something that can shoot through walls, or knock down walls, or buildings. Oh, and don't forget that sometimes your firepower is walking beside you...give us a phone, will you?

**MANEUVER:** This requires a bit of qualification. As we all know, there are several levels of war, and therefore we need to think of maneuver and movement at all of these levels. So stop thinking about the dash speed or cross country mobility of the M1 and think at all three levels, the tactical, operational and strategic. At the strategic level, we are talking about movement on a global scale. Ask yourself, "How quickly can I

get there?" Either the Navy or the Air Force will take us to the dance. The question then is, how much armor can we get there at the speed of the infantry? Since the infantry will fly, we need armor that can get there by that method as well. If we are going to fight and win our nation's wars together, then you have to be there to make sure that I don't become somebody's speed bump.

The operational level is the real clincher. This is your worst area, and very few of you even realize this fact. You need a lot of improvement here, though the limitation in this area is not so much the weight of your machines but the weight of what it takes to keep them moving.<sup>5</sup> Operational speed means that you need to think about a scale of operations larger than movement from main post, Fort Hood, to North Fort Hood. In short, and in terms understandable to all members of the armor community with more than one PCS, think of maneuvering from Fort Hood to Dallas. That is the distance I expect my infantry to cover, tens of thousands of them, dismounted if need be, in three days. Roughly 1,000 gallons of fuel would be needed for that in the worst case scenario. (Remember that once upon a time hundreds of thousands of infantry might cover that distance with zero gasoline.) Most of that will go to haul food. Will you be there with us, if that is the fuel limit? If not, how many infantry will I need to give up to bring in a fuel carrier for your armor? If I have to give up too many, what are you going to do, dismount and start room-clearing on the interior of buildings with me? Not likely, so figure it out.

## CONCLUSION

To make a weak historical point, I would note for you that despite the fact that the German Tiger and King Tiger tanks were "the greatest heavy tanks of WWII" they were also the tanks used by the losers. The Germans lost using the Panther and Tiger. What did they have when they were winning? The MK II, III and IV, tanks that were far lighter, far less capable, and far more likely to be "there" when the infantry needed them, thank you very much. We in the infantry are screwed without you. I don't care how many of my brethren thump their chests mightily and place their berets at a jaunty angle, when we hit that first barricade, or we see our first T-80, we're all screaming "ARMOR, get me some @%&#\* ARMOR!" The question then is going to be, "where are you?"

I hear it in the hallways when I talk to tankers, officer and enlisted. The grumbling and reservations. Let me make this clear. If you keep pretending that the M1

is god, that it is the be-all and end-all of armor, you won't be there for us when we need you. Some politician will decide that 70 tons of steel "sends the wrong message" and you will be pulled back to the States just when I need you the most. That or your treads will seem "offensive" or cause too much damage and you will be held back. Moreover, continuance down that same old design path was going to ensure you would get your lunch eaten by some 16-year-old Third World punks with a sense of depth and a view from the sixth floor. Choose. Will you be there with me? Lord knows I need you. I pray that you'll be there with me, because there is no doubt in anyone's mind that I'll be there, is there?

## Notes

<sup>1</sup>The author has the dubious honor of generating the most letters to the editor (in response to articles) in the 113-year history of *Cavalry Journal/ARMOR Magazine*.

<sup>2</sup>The best recent works on this era are David Johnson, *Fast Tanks and Heavy Bombers*, (Cornell, 1998), *The Challenge of Change*, Harold Winton and David Mets, ed. (Nebraska, 2000) and William Odom, *After the Trenches* (Texas A&M Press, 1999).

<sup>3</sup>"Groggnard" (Grow-nyar) was the nickname given by Napoleon to his veterans in his elite formation, the "Old Guard." This was a select unit, a part of Napoleon's Imperial Guard, the minimum requirements for entry into the corps was that one must be a veteran of no less than seven separate campaigns. (Imagine a division-sized formation of First Sergeants) As old soldiers are wont to do, the Old Guard would "grumble" regardless of the rank of the officers nearby. Groggnard is French for grumble.

<sup>4</sup>"Life After Operational Maneuver" by CDT Joseph Berg and CPT Robert Bateman, *ARMOR*, Vol. CVIII, No. 2, March-April 1999, pp. 16-19.

<sup>5</sup>The caveat to that is obvious. You need to be able to cross all the bridges that I can cross, without any additional reinforcement, assuming the bridge is not damaged to begin with. That is a simple requirement to Operational Level maneuver.

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ROLL ON!

## Army Selects LAV III Variants To Equip New Interim Brigades



The LAV-based Mobile Gun System mounts a low-recoil 105mm cannon on the LAV's eight-wheeled chassis.

— Jody Harmon Drawing

The Army has selected two variants of the wheeled LAV III Light Armored Vehicle to equip the new Initial Brigade Combat Teams (IBCTs) now in training at Fort Lewis, Washington. This historic shift from tracks to wheels, and from heavy to lighter armor, followed months of testing and evaluation of both wheeled and tracked candidates.

The winning entry, manufactured by a partnership of General Motors and General Dynamics Land Systems (GDLS), includes a troop carrier version, with a number of subvariants for specialized missions, and a mobile gun system mounting a 105mm cannon on a pedestal above the hull. Purchasing 2,000 of them, enough to outfit the first six medium-weight brigades, will cost an estimated \$4 billion. If the Army goes forward with plans to form another two brigades in this configuration, it will have to spend an additional \$3 billion for the brigades' vehicles. These totals do not include electronics and communications gear, which will be supplied by the Army.

The selection ends, at least for now, a heated debate within the Army over the virtues of wheels versus tracks and over

whether the more deployable light armor will be survivable enough against modern weapons. The base vehicle, without additional armor, protects against 14.5mm heavy machine gun fire, while the current main battle tank has never been penetrated by any enemy weapon system. On the other hand, the 70-ton tanks require weeks of travel by sea to arrive at a distant theater, while the eight-wheeled armored cars, at 19 tons, can be transported by the C-130, the Air Force's smallest battlefield airlifter. The new brigades will be designed to be able to move to world trouble spots within 96 hours.

The Army was seeking an "off-the-shelf" armored system to outfit the new brigades and invited contractors to demonstrate their vehicles last winter at Fort Knox's Platform Performance Demonstration. Both tracked and wheeled vehicles took part. Meanwhile, the first of the new brigades began training at Fort Lewis, using vehicles borrowed from Germany, Italy, and Canada. Canada loaned the U.S. 25 of its LAVs for training, and other vehicles were on loan from several other countries while the selection process went forward. The vehicle selected resembles the earlier

version of the LAV in use by the Marine Corps, but the new vehicle's armor protection is better, according to COL Joe Rodriguez, who manages the program for the Training and Doctrine Command.

The cross-country mobility of wheeled armor, in dispute during the selection process, was not a problem with the Canadian Army "loaners" in the Fort Lewis training, according to MG James Dubik, who was until recently in charge of training the new brigade. He said there were few problems negotiating swampy areas, and that he was completely satisfied with the vehicles' off-road mobility.

The current contract schedule calls for 2,131 of the new vehicles to be delivered by 2008. Variants will include 714 infantry carriers, 321 reconnaissance vehicles, 252 command and control vehicles, 241 mortar carrier variants, plus specialized versions as antitank vehicles, fire support vehicles, armored ambulances, NBC reconnaissance vehicles, and an engineer support variant. In addition, there will be 204 Mobile Gun Systems (MGS), a variant which incorporates the 8-wheel troop carrier hull



The basic LAV III infantry carrier is used by Canada, Denmark, Sweden, and Ireland, with New Zealand and Switzerland soon to add these vehicles to their armies. It can carry a nine-man squad, plus a two-man crew. Combat loaded, four of the vehicles can be carried by a C-5A, two on a C-17A, and one on a C-130.

— GM-GDLS Photo



with a pedestal-mounted 105mm cannon on the top deck. The cannon is the low recoil version of the L68, which is similar to the cannons on the M60-series and early M1-series tanks. The MGS, which has an autoloader, will inherit a vast store of former tank munitions, including special purpose rounds that are not available for the 120mm cannons on current tanks.

The contractor is a joint venture between General Motors Electro-Motive Division and General Dynamics Land Systems Division. Suppliers come from five countries, including the U.S., Canada, Germany, Britain, and Israel. Sixty-five percent of the work will be done in the U.S., and the first vehicles are expected to be delivered in the 3rd quarter of FY 02. More than 5,000

LAVs are in service. Similar types of LAVs have been built for Canada, Denmark, Sweden, and Ireland, and New Zealand and Switzerland are committed to adding the vehicle to their armies.

An earlier version of the LAV entered Marine Corps service in 1983, and was employed in Operation Just Cause in Panama. LAVs were also employed in





The Mobile Gun System firing its 105mm cannon in a firepower test. The cannon is a low recoil version of the L68 cannon that equipped the M60 and early M1-series tanks.

— GM-GDLS Photos



These three views are of the infantry carrier version of the LAV III, the most numerous variant in the new brigade structure. In addition, there will be reconnaissance, NBC surveillance, ATGM (TOW), fire support and engineer support variants, a mortar carrier, an armored ambulance, and a command vehicle.

Desert Storm, IFOR and KFOR in the Balkans, and in Somalia.

The infantry combat vehicle variant weighs 37,796 lbs., and is capable of carrying a nine-man squad up to 60 mph. Its Caterpillar diesel and Allison transmission have a low acoustic signature and consume 5.7 miles per gallon. The vehicle has a range of 300 miles.

The design includes a fire suppression system, run-flat tires that remain mission capable when perforated, and a remote weapon station capable of mounting the .50 caliber heavy ma-

chine gun or the Mark 19 grenade machine gun.

Protection levels include all-around protection from 14.5mm heavy machine guns with an applique option to protect against the RPG-7. The top deck will protect against 152mm airbursts.

Logistics are simplified since the family of vehicles share 85 percent of their parts. This will also simplify the maintenance challenge for units in forward areas where there is little infrastructure. Once on the ground, the vehicles are

self-deployable, eliminating the need for heavy equipment transporters. When bogged down, a winch can be used for self-recovery.

Fort Benning's Infantry Center has primary proponentcy for the new brigades, except for the Mobile Gun System units and the reconnaissance functions, which are Fort Knox's responsibility.

*This article was prepared by the ARMOR staff from Army and corporate news releases.*



M48 tanks of the Bundeswehr's 35th Panzer Brigade move into position during NATO maneuvers near Grafenwoehr in 1970.

## Battle Tanks for the Bundeswehr

# Modern German Tank Development, 1956-2000

by Rolf Hilmes

This article will give *ARMOR* readers an overview of the Bundeswehr's development of main battle tanks since World War II. It will cover Germany's initiation of its own MBT development, beginning in 1956; the introduction of the two new tank series that resulted, the Leopard 1 and Leopard 2; and some details of the test bed projects and studies completed during this period.

### Introduction

The Bundeswehr obtained its first series of tanks from the U.S. in January 1956. They were M47s, and while their performance was not the best, these 1,100 tanks provided German tank crews with solid, basic tactical skills in the Bundeswehr's early days.

The M47s boasted modern suspensions and automatic transmissions, which contributed to a substantially easier driver's operation. But their disadvantages were considerable. They consumed enormous amounts of fuel, about .33 miles per gallon on the road, and this could double when driving in difficult terrain. Handling was not the best, nor were the optical components in the turret, in particular the optical range finder, which led to frequent difficulties.

For the U.S. Army, the M47 was an interim solution, and the U.S. fielded the M48 beginning in 1953. But a delivery of this MBT to friendly states was not possible before 1958, when the first of 1,462 M48 tanks were delivered to the German Army. The M48 was more reliable than the M47 and exceeded the earlier tank in all parameters

of firepower, mobility, and protection. The M48 had a crew of four, compared to five on the M47, so there was a relatively spacious compartment for crew and components. There was also room for growth: its 90mm cannon was easily replaced with the NATO-standard L68 105mm gun in 1978. Germany even explored putting a 120mm smoothbore cannon on the M48!

This tank remained in service with the Bundeswehr until 1993, and in a way, it is still in service. Some M48 hulls have been converted into Keiler mine-clearing vehicles.

### A Joint Project Fails

Because U.S. tanks did not fulfill all German requirements, specific national requirements for a future main battle tank were established by the chief of staff of the German Army in 1956.

German objections to the U.S. MBTs were that they were too heavy, too bulky, and too high. Beyond that, German industry wanted to be in a position to carry on independent development and production of MBTs on a long-term basis.

Military requirements initially called for an MBT of 30 metric tons, and the tank was to be developed jointly with France. Later, when Italy agreed to the same military requirements, optimists spoke of a "European standard tank." It was agreed that France and Germany would build their own prototypes, but the arrangement broke down, and by the time testing of the two tanks began in 1963, the joint tank development agreement had clearly failed. The French went on to build the AMX 30 and the Germans the Leopard 1.

### The Leopard 1 Project

From a technical point of view, the development and testing of the Leopard 1 was a very successful project for Germany. The high reliability and the low operation and support costs of the Leopard 1, in comparison to other MBTs of that time, were essentially based on very systematic development, careful component selection, and extensive testing of both the components and the system. When compared to U.S. battle tanks of the same period, the Leopard 1 possessed a number of advantages:

- Higher weapon efficiency, better combat surveillance, and situational awareness for the commander due to the tank's panoramic sight
- More favorable task distribution within the crew
- Higher tactical and operational mobility
- Improved stream-crossing mobility and easier transportability
- Lower vulnerability and greater endurance due to its diesel engine
- The inclusion, for the first time, of an NBC protection and ventilating system
- Acceptable ergonomics for the crew
- An overall higher reliability and life expectancy of the entire system.



An M47 demonstrates its mobility in a 1958 exercise by Panzer Battalion 64.

But the Leopard clearly had less ballistic protection than the M48.

The Leopard 1 also stood its ground well in international comparisons with the other main battle tanks of the '60s: its firepower was equal and its mobility outstanding, surpassing all the other MBTs in both road and cross-country driving. Its protection was below average, although it was better than the protection of the AMX 30. The decision for less ballistic protection was based on the idea that mobility was a part of survivability.

A very efficient and functional family of vehicles was developed in the '70s on the platform of the Leopard 1. The availability of an extensive system environment, including training aids and simulators, etc., as well as an efficient logistics system in German industry, helped this vehicle become an international success. The Leopard 1 finally became the European standard tank!

Between 1965 and 1976, the German Army procured 2,437 Leopards. Today, the Bundeswehr tank force includes 727 Leopard 1A5s; the rest have been sold. Within the next few years, some Leopard 1s will be modified to become artillery observer vehicles to accompany our new howitzer, the Panzerhaubitze 2000, but after a service life of over 30 years, and given its outdated armor protection, it will no longer be employed as a main battle tank in the Bundeswehr. Nevertheless, other countries — including Australia, Belgium,

Canada, Denmark, Greece, Italy, Norway, Turkey, Brazil, and Chile — will continue to use Leopard 1s, with various different updates, in their armor forces.

### The MBT 70/Kpz 70 Project

Both the M60 in the U.S. Army and the M48 in the Bundeswehr were scheduled for replacement in the early '70s. This expectation led the U.S. and Germany to begin joint development of a new battle tank for their armed forces in the MBT 70/Kpz 70 project. Both nations agreed on joint military requirements and later on a joint vehicle design, which was a great improvement on the earlier German-French MBT-project. The main characteristics of the MBT 70 were:

- A 152mm weapon system that could fire both guided missiles (the Shillelagh) and conventional ammunition
- A three-man crew with the driver in the turret
- An automatic loader for the main weapon
- A 20mm automatic cannon as secondary weapon, capable of independent laying
- Stabilized optics
- A retractable, extendable night vision device, based on low-light intensifier technology
- Radiation shielding of the crew compartment
- An 1,100 kW engine
- Hydro-pneumatic suspension with adjustable level control
- Air conditioning and NBC protection
- Spaced armor in the front of turret and hull.

Tests began in 1967. Not surprisingly, given the project's high performance specifications and the associated development risks, nearly all components had substantial deficiencies, with components either under-performing or failing reliability standards. The Germans spent nearly \$410 million in development costs until mid-1969, and fielding of the vehicle was not yet in sight. It



At left, a Leopard 1 leaps over an obstacle in a mobility demonstration at Munster by PzLehr Brigade 93.

became obvious that the complexity of the MBT 70 would lead to immense O&S costs and that the total system could not have been used effectively by a conscript army. Competition between the industries of both nations intensified with the development of individual components, but by the end of 1969, the bilateral development was terminated. Some progress had been made, and both partners had gotten to the prototype development stage before the program was halted. Germany would never reach this stage again with any other joint MBT project.

### From MBT 70 to the Leopard 2

After termination of the MBT 70 program, Germany worked to keep the basic concept alive by simplifying and reducing development risks. They dropped the idea of putting the driver in the turret, in a capsule that always faced forward even when the turret traversed. This feature proved to be disorienting to the driver, and was dropped in favor of a more conventional 4-man crew arrangement, with the driver in the hull. By 1971, developers finally succeeded with a tank concept, which had originated in 1968 in the "Keiler Study."

The first prototype of the Leopard 2 tank was completed in 1972, equipped with a 105mm smoothbore gun. From 1972 to 1975, there were 17 prototypes developed to test various kinds of equipment. Some variants used torsion bar suspensions, some hydro-pneumatic; some mounted 105mm guns, others the 120mm smoothbore. After analyzing the results of the 1973 Yom Kippur

War, the maximum weight limit of the new tank was raised from MLC 50 (approx. 47.5 tons) to MLC 60 (approx. 55.4 tons). Starting in 1975, the hull and turret were again completely revised and the front and side areas of the combat compartment were equipped with special armor sections. This resulted in the so-called Leopard 2 AV. After a development time of over seven years, at a cost of about \$325 million, Leopard 2 was ready for fielding. The German Army procured 2,125 Leopard 2s from 1979-1992.

As with the Leopard 1, systematic development and intensive technical and user tests led, in the long run, to a highly sophisticated product. The Leopard 2 represents an overall optimal system in terms of efficiency, performance, size, and weight. Remarkably, in all international competitions, the Leopard 2 proved a winner when competing against other international tanks, resulting in its adoption by Switzerland, Sweden, and (probably) Greece. Almost 20 years after the delivery of the first full-production vehicles, another version with more sophisticated equipment and high performance armor protection was designed and built for Sweden.

New production is also intended for Spain, while refurbished Leopard 2s are used by Austria and Denmark. Presently, seven nations use this weapon system.

Since 1984, there have been various product improvements. In 1995, the Leopard 2A5 version began production. A total of 350 vehicles will get the following improvements:

- Additional protection at the turret front and sides
- A liner in the crew compartment
- A new driver's hatch with better ballistic protection
- An electric turret drive
- A new commander's periscope sight with day-night channel
- A TV camera aimed backward to help the driver reverse the vehicle.

Last July, an agreement was reached to bring 350 vehicles up to Leopard 2A6 configuration from 2001-2005. Features of this version are:

- A new gun with a longer barrel (+ 1300 mm)
- New kinetic energy ammunition (LKE 2).

These modifications increase the muzzle energy from 10 megajoules to 13.5 MJ, and muzzle velocity from 1,650 m/sec to 1,750 m/sec.

Besides the official improvements for the Bundeswehr, the German tank industry, and specifically the prime contractor, Krauss-Maffei-Wegmann, is improving the Leopard 2 as a private venture. A demonstrator vehicle is being built with a cooling system for the crew compartment and an auxiliary power unit. A second demonstrator will be built with the Euro-Power Pack (a 1,250 kW diesel), improved mine-protection, and possibly a new ammunition storage arrangement in the rear of the turret.

### A Joint British-German Project

In 1969, four years after the fielding of the MBT Leopard 1, the German Army's Chief of Staff began pondering its termination. The Leopard 1 was scheduled to be replaced by a new MBT in the mid-1980s.

There were similar considerations in the UK concerning their Chieftain MBT. Therefore, at the beginning of the '70s, negotiations took place with the British to develop joint tactical requirements of a future MBT 80/KPz 3. Nationally, the tactical requirements for a Leopard 1 successor were issued in April 1972, calling for a procurement of 2,180 MBTs, beginning in 1985.

Similar to the French-German attempt to build a standard tank, each nation drafted independent concepts to meet





## Some Experimental Concepts



Above, an MBT 70 prototype “kneels” in a demonstration of its unusual variable height suspension.

At left, the VT 1-2 prototype, a turretless casemate tank with two 120mm cannons mounted in the hull, undergoes testing at Munster.



At lower left, a model of the flat turret technology, which included a roof hatch which could go up at the rear to allow the gun to depress. This feature permitted a flatter turret and lower vehicle height, while saving weight.

the tactical requirements. The German team suggested some interesting but very sophisticated concepts in 1973, including a turreted tank, a casemate tank with armament in the hull, and an externally-mounted gun concept). Demonstrators were also tested in 1973 that included the testing of a casemate tank with two cannons in the hull (VT 1-1 and VT 1-2).

In 1974, during the evaluation of the submitted concepts, none met the requirements, especially the requirements for protection, weight, logistics support, and costs. These problems could not be solved, and the German-British tank program was terminated in 1977.

The UK insisted on a turreted concept for a future tank design (which later became the Challenger program), while Germany did not see a significant improvement in a turreted concept compared to the Leopard 2 then under development.

### Innovative Turret Concepts

Between 1976 and 1978, Germany began an intensive search of battle tank concepts with externally mounted guns. From the technical point of view, there were hopes that this design would provide better protection than Leopard 2 within the upper weight limit of MLC 60. The studies were also accompanied

by advanced technology demonstrators, VTS-1 and VTF.

However, there were serious doubts about the external gun concept. The hull station lacked the 360-degree visibility for the commander found in the TC's position in a turreted tank. This created substantial command and control problems. The external mount also increased the probability of a firepower kill. Correction of malfunctions on the weapon would not be possible from under armor, hence combat could no longer be carried out in an emergency. The weapon itself had limited traverse of +/-60 degrees. And finally, there was no reasonable adaptation for an anti-aircraft machine gun.

At the end of 1977, considerations focused on the low profile turret concept of Wegmann. A moveable hatch in the turret roof allowed a flatter turret design, reducing the height of the turret about 30 percent, which achieved the necessary weight reduction. In studies at the end of 1978, different variants of the low profile turret concept were examined with front- and rear-driven hull concepts (FT mod. 1 - 4).

### Another Joint Project Fails

The studies of the low profile turret concepts coincided with the beginning of another French-German tank program (MBT 90), which had the goal of fielding a new tank as successor to MBT Leopard 1 and the French AMX 30, with fielding beginning in the 1990s. Both nations were well aware of the lessons learned from the failure of the earlier joint program. This time, the program was structured carefully and a goal set to reach a joint agreement on important basic requirements before detailing technical problems or building prototypes.

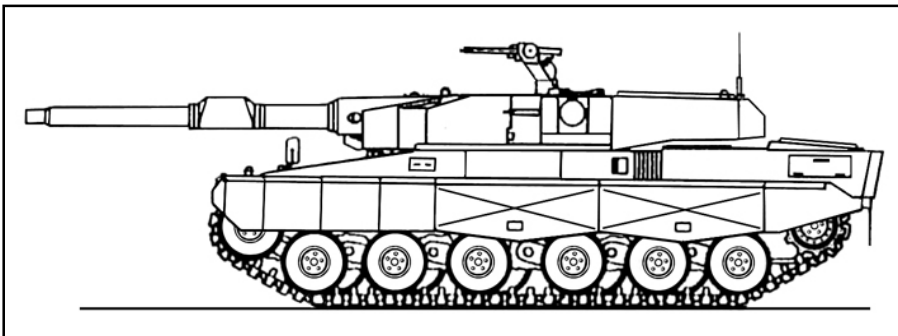
In the first phase, joint resolutions were to be achieved in regard to:

- Military requirements for the future main battle tank
- Harmonizing governmental and industrial organization for the joint project
- Timely planning, as well as allocation of the work package and the funding
- The necessary procedures (e.g. evaluation; type of contract, reimbursement of costs etc.)



Above, a prototype of the Leopard 2A6, with its longer gun tube, seen here at the 1998 Eurosatory arms show.

The drawing below is a proposal that incorporated the flat turret and the Euro-Power Pack, which reduces the length of the chassis about three feet with commensurate advantages in weight reduction.



- Proceedings for possible international cooperation and regulation of export questions
- A joint basic MBT concept.

In the course of the project, cooperation problems arose and their solutions were obviously extraordinarily difficult. France insisted on a weight of MLC 50 (approx. 48 tons) as upper weight limit. And due to budgetary reasons, France also insisted on a 1991 date for first unit fielding. On the other hand, Germany's procurement budget was tied to the Kampfswagen 90, and sufficient funding was not available before 1996. From the German point of view, there was no significant advance in chassis technology compared to that of the MBT Leopard 2. Therefore, Germany decided in 1980 to use the newly developed low profile turret on a Leopard 2 chassis, an idea that, understandably, drew no approval from the French partner, who had done a lot of work to develop a tank chassis with new technology. Disagreements also arose over the allocation of work between the two countries, the planned single-source production of important components, and the handling of the export rights.

At the end of 1982, it was obvious that the second attempt at a French-German joint MBT had failed once again.

### Upgrading the Leopard 2

In 1983, it was clear to the German Army that within the time frame of the intended introduction period of a future MBT, i.e., 1996, there were no new technologies that couldn't be transferred into upgrades of the Leopard 2. Therefore, new studies in the mid-'80s primarily targeted enhancement of the Leopard 2. The Leopard 2A5, as well as the Swedish version (Strv 122), are based essentially on the results of these studies completed in 1986.

In 1984, the date for the first unit to be equipped with a new MBT was postponed to 1999 due to budget constraints. As a result, the MOD took a new approach in the MBT program and requested the development of a new tactical requirement. Until the end of 1988, industry worked on the definition of new tactical requirements for the Panzerkampfwagen 2000 (PzKW 2000). Contrary to earlier practices, the Army was now ready to accept innovative technologies for the PzKW 2000. The

constantly increasing demand for protection within the given weight limit of MLC 60 could only be realized with a space-optimized tank concept, e.g., an externally mounted gun. Remarkably, the Army was also ready to accept a two-man crew (with two-man alternate crew) after an appropriate field test showed positive results. Other substantial characteristics of the PzKW 2000 were:

- A large-caliber powder gun, possibly 140 mm
- A digital fire control system with modular structure
- A 2nd generation FLIR and CO<sub>2</sub> laser rangefinder
- Multi-sensor technology for automatic target engagement
- An integrated command, control, and information system (IFIS) with digital data communication
- A digital bus system for the entire vehicle
- Realization of an effective overall protective concept.

Compared to the Leopard 2, firepower, as well as survivability, was planned to be significantly increased with the PzKW 2000. But before the project could be added to the German Armed Forces plan of 1989, it was cancelled, like numerous other projects of the KW 90 program, because of the political changes in Europe and the reunification of Germany. There was also a dramatic shortage of funds and a change of priorities in defense planning. As the '90s began, this changed political situation led to a 50 percent reduction in the Armor branch of the German Army.

Looking to the future, and based on the complexity and the necessary development efforts for a future MBT, a development time of approximately 10-15 years is still expected. A replacement for the Leopard 2 is now envisioned in the time frame of 2015 and beyond, requiring immediate development activities.

### Into the Future

Mission statements and operational requirements for a future tank family have been compiled since 1997. They were accepted into armament planning under the specification "New Armored

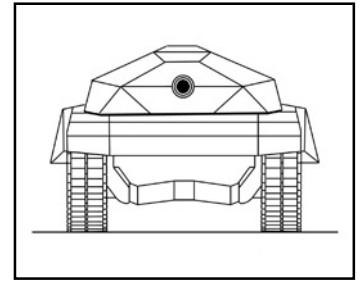
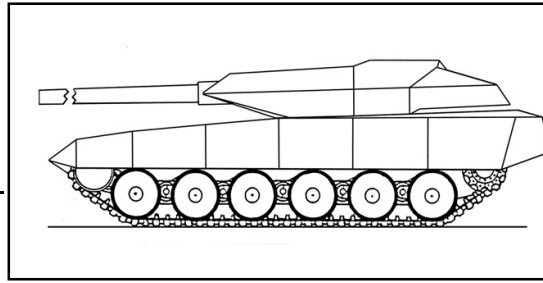
Platforms" (*Neue Gepanzerte Plattformen* = NGP), which is intended to result in development of the following armored vehicles:

- A platform to fight heavy ground targets (i.e., MBTs)
- A platform to fight the remaining target spectrum with the capability to incorporate a dismounting component (i.e., mechanized infantry fighting vehicles)
- A platform for combat support tasks, i.e., antiaircraft vehicle, mortar vehicle.

With a proposed introduction date of somewhere in the 2008-2025 time frame, the employment of innovative component technologies is necessary for the NGP in important areas. Appropriate preliminary investigations and proofs of feasibility were introduced, including the production of the testbed "EGS" (*Experimentalwanne Gesamtgeschutz*). The EGS also incorporates a compact 2-man crew compartment. Further investigations will explore a 2-man crew compartment with sophisticated ergonomics and a comprehensive total protection system incorporating signature reduction and the use of defensive aids suites. New tank armament is being considered, either a 140mm high-velocity powder gun or a 120mm electro-thermal-chemical gun (ETC). It would incorporate a sensor package for reconnaissance, surveillance, and target acquisition; a sophisticated C<sup>4</sup>ISR system; digital system architecture; and an electric drive system.

Based on past experience, it is unclear whether the development of the new MBT should be carried out as a national program or together with a partner. Today, the development of a future mechanized infantry fighting vehicle is top priority. The IFV is planned for fielding about 2009, but before this will happen, many political, technical, and economical difficulties must be solved.

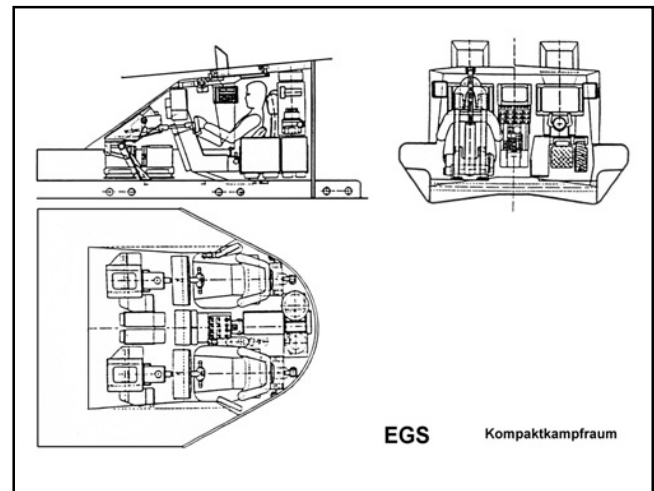
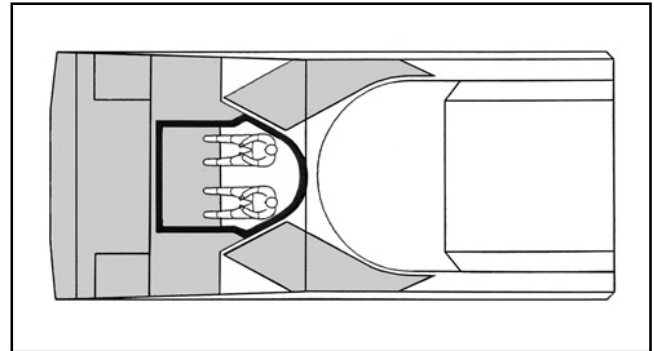
A future MBT must differ in important combat effectiveness parameters and operation characteristics from the Leopard 2. This will require the employment of future-oriented technologies, especially in the areas of armament, drive components, survivability, and C<sup>2</sup>. It is obvious that these stringent requirements have serious impacts on



## Into the Future?

The "EGS" concept tank has a two-member crew, located deep in the hull, which permits a weight of about 48 tons. This would be augmented with defensive aids, signature reduction technologies, and either a 140mm conventional gun or a 120mm electro-thermal-chemical gun incorporating new technology.

The tank, proposed for use in the 2008-2025 time frame, would also benefit from emerging technologies in its sensor package, a digital system architecture, and electric drive.



development and engineering. It remains to be seen whether reasonable solutions for these difficult problems will be found in the coming years so

that the German Armored Force will be equipped with an efficient main combat system to challenge the future threats and tasks expected.

Rolf Hilmes is a Reserve officer of the German Armored Forces who trained on the M48, Leopard 1, and Leopard 2. After mechanical engineering studies at the Technical University in Darmstadt, he began employment with the Federal Office for Defense Technology & Procurement (BWB) at Koblenz in 1975, where he was responsible for tank technology and test-bed programs. Since 1989, he's been a lecturer at the Federal Academy for Military Administration and Technology (Mannheim) in the field of land weapon systems. He is consultant editor of the magazine *SOLDAT UND TECHNIK* since 1978 and author of specialty books such as *Battle Tanks — Developments of the Post-War Period* (1986) and *Battle Tank — Technology Today and Tomorrow* (1999).

# Death on the Highway: The Destruction of Groupement Mobile 100

This Viet Minh attack on a French convoy had strategic implications

by Captain Kirk A. Luedeke

## Introduction

The ambush and subsequent destruction of Groupement Mobile 100 was one of the last engagements in the French-Indochina War that involved more than one battalion of French and Viet Minh troops. This overview will discuss the strategic implications of the time, the area of operations, the antagonists in terms of their leadership, order of battle, doctrine, and strengths and weaknesses.

## Strategic Setting

In late June 1954, the French-Indochina War was all but over.<sup>1</sup> The massive French defeat at Dien Bien Phu, along with a proportional yearly increase in French casualties since the conflict began in 1946, had drained France's desire to continue with the hostilities. France was beginning to call her soldiers home.

The fledgling Vietnamese National Government believed their victory at Dien Bien Phu was not enough to guarantee the concessions they desired from the French government.<sup>2</sup> As such, orders went out to continue to fight the French military and to inflict as many casualties as possible. The more French blood was spilled in Vietnam, the stronger the position of Vietnamese negotiators at Geneva, Switzerland.

The French Army garrison at An Khe was one of several outposts that was abandoned in the wake of Dien Bien Phu. In many cases, civilians and high-ranking military officials were flown out of An Khe, while the majority of French soldiers evacuated An Khe in armored columns along the winding colonial routes that snaked across the Vietnamese Central Highlands. One such convoy was known as Groupement Mobile 100, a conglomeration of infantry and artillery units that had been fighting the Viet Minh in the Central Highlands for over a year. Bloodied and tired, yet proud, the soldiers of G.M. 100 were ready to return home



when they departed their garrison on the 24th of June, 1954. Most would never make it, dying in a little-known ambush that resulted in the destruction of their once-mighty task force. While not a major engagement by the standard of the French-Indochina War, the death of G.M. 100 was characterized by savage fighting, and doomed by the mistakes of its senior leadership. The soldiers of G.M. 100 were some of the best in the French Army, and it was for that reason that any of them at all were able to reach the safety of Pleiku several days after the ambush.

## Antagonists

Prior to 1941, Indochina had not been an important colony in the French colonial empire. French involvement there began with priests who first came to Vietnam in the 17th century in an attempt to convert the natives to Christianity. By the 19th century, the French government had discovered that Vietnam's three great rivers might allow them a more direct trade route to China. While the rivers turned out to be useless for trading purposes, the French were in Vietnam to stay.

French rule did not benefit the Vietnamese people. France built a modern

infrastructure of roads, railways, and ports, but this was not done to help the local people, but to exploit them.<sup>3</sup> Unlike the British, the French did not allow their colonies a degree of self-rule. As a result, a number of clandestine groups formed to resist French rule, but they lacked dynamic leadership to unite them. Ho Chi Minh would change that.

Ho Chi Minh attempted two uprisings in the 1930s in the name of the Vietnamese Communist Party, but France suppressed both. Ho escaped Vietnam and waited for another chance to free his country from the yoke of colonial rule. After the fall of France to the German blitzkrieg, France was allowed to keep her holdings in the Far East. Japan demanded they be allowed to use Indochina as a staging area for their army and navy, as well as use of Indochina's natural resources.

Japan's defeat in 1945 created a power vacuum in Vietnam. Ho Chi Minh and his supporters established a provisional government in Hanoi and attempted unsuccessfully to get the United States to recognize the government as legitimate. France, adamant that Indochina was still its colony, prepared to go to war against Ho and his Viet Minh. Hostilities between France and the VM broke out in November, 1946. The conflict would rage on until July 20, 1954 when the French-Indochina War officially ended.

## Area of Operations

Located in the central highlands of Vietnam between the provincial capital of Pleiku and Qui Nhoi, on the coast of the South China Sea, An Khe was an important French Army outpost. Because of its proximity to the few Vietnamese roads in the highlands, the French military was able to patrol the area with its mechanized forces and could interdict Viet Minh combat units as they attempted to infiltrate south.<sup>4</sup>



By late June, 1954, the French Command, recognizing that the Viet Minh were in position to launch a major offensive in the Central Highlands, and with no reserves with which to combat them, ordered An Khe evacuated. The VM intended to strike at the French as they withdrew, positioning themselves to intercept the French columns as they made their way to the various link-up points throughout Vietnam.

Late June, 1954 was dry season in Vietnam. The roadways were easily trafficable, making movement along the Route Coloniales (R.C.s), a rapid affair. Having been in Vietnam for well over a year, the French troops were acclimatized to the summer's brutal heat.

Terrain played a major role in the destruction of G.M. 100. The road between An Khe and Pleiku (R.C. 19), was bordered by tall elephant grass and dense jungle vegetation which provided excellent concealment for attackers. In many places along R.C. 19, the rocky terrain channeled the road into narrow defiles, severely restricting any kind of mounted maneuver. The Mang Yang Pass was the link-up point where G.M. 100 and G.M. 42 would join, 20 kilometers from An Khe. Colonel Barrou viewed the pass as key terrain.

### Comparison of Antagonists

When the French-Indochina War began in 1946, France firmly believed that her superior technology and military machine would defeat the Vietnamese peasants quickly enough. France received a good deal of military equipment from the United States and Great Britain and benefited from the support of both nations. France set up a series of provincial commands in Vietnam's towns and cities from which it would launch attacks into the northern portion of Vietnam, using overwhelming combat power to grind the Viet Minh into submission. To help them in their fight, the French also used special operations troops to recruit mountain tribesmen who disliked the Vietnamese. France underrated the ability and fighting savvy of their opponents and would continue to do so for the duration of the war.<sup>5</sup>

The Viet Minh had no illusions about their capabilities against the French military, nor how they would wage their war for independence. The VM initially fought a guerrilla war against the French, ambushing light convoys,

overwhelming under-defended outposts and striking at supply and ammunition depots to hinder France's resupply efforts while adding to their own cache of weapons and ammunition. As the years progressed, the VM, receiving military aid from China in the form of equipment and military advisors, were able to fight larger engagements with French forces, oftentimes overwhelming French forces with human wave tactics. VM doctrine attempted to avoid the set-piece battle unless they enjoyed an overwhelming force ratio, as evidenced in their 12-to-1 advantage against the French defenders at Dien Bien Phu. Ho Chi Minh's strategy was to bleed France dry, knowing that his people were in it for the long run, while the French were not.

The G.M.s were designed as self-sustaining motorized brigades modeled after the U.S. Army's World War II combat commands. The G.M.s typically consisted of three infantry battalions with one artillery battalion, along with elements of light armor or tanks, engineer, signal and medical assets, totaling 3,000-3,500 soldiers. The G.M.s were effective at rapidly reinforcing threatened sectors in the Delta, but the hills and swamps, prevalent in Vietnam, hindered their effectiveness, restricting the G.M.s to narrow roads. Their mobility quickly became their Achilles heel, as their vehicles could not traverse the restricted terrain.<sup>6</sup>

The French order of battle included:

- *Groupement Mobile 100*, Colonel Barrou, commanding.
- Headquarters Company 100, Capt. Fievet, commanding.
- Regiment de Coree (Korea Regiment), Lieutenant Colonel Lajouinie, commanding.
- 1st Bataillon de Coree (Korea), Major Kleinmann, commanding.
- 2nd Bataillon de Coree (Korea), Major Guinard, commanding.
- Bataillon de March /43e Regiment d'Infanterie Coloniale, Major Muller, commanding.
- 10e RAC (Artillery), Major Arvieux, commanding.
- III Escadrille/5e Rgt Cuirassiers ('Royale-Pologne'), Captain Doucet, commanding.

Groupement Mobile 100 was a veteran force with a paper strength of 834

soldiers in each infantry battalion. The Korea Regiment had distinguished itself fighting alongside the U.S. 2nd Infantry Division in Korea and proudly wore the unit's Indianhead patch.<sup>7</sup> Many of its officers had taken a reduction in rank to serve in the Coree. The 43rd Coloniale was a crack unit of Cambodian and Vietnamese soldiers who had fought well in the past.<sup>8</sup>

It can also be said that G.M. 100 was tired from the bloody fighting and many saw their withdrawal as a sign that the war for them was over. G.M. 100 was well-led by officers and NCOs, at the company level as well as in senior leadership positions. Colonel Barrou was a compassionate officer who recognized the Groupe Mobile's vulnerabilities early in his command when he wrote in his diary:

*"The most delicate problem remains that of the protection of the artillery and of the means of command and communications, since the largest possible number of infantrymen must be left free to search out the enemy and fight him.*

*"The very means of support and coordination which makes the strength of the G.M. also create some enormous obligations in a mountainous area where roads are rare and of poor quality"*<sup>9</sup>

These words would haunt the colonel later, considering the fate of his unit. G.M. 100's leadership was strong, consisting of blooded, dedicated officers who were no strangers to the war in Vietnam. Perhaps it is a tribute to them — the sergeants, lieutenants, captains and majors of the G.M. — that any of its soldiers survived the bloody ambush at PK 15.

### Viet Minh Regiment 803

The Viet Minh enjoyed widespread support among the civilian population of Vietnam, and dealt harshly with those who had profited from the French presence. The Viet Minh army was formed from tough peasants, ideologically committed to an independent, Communist Vietnam. The sufferings heaped upon the people by corrupt Vietnamese in power, as well as military operations and atrocities by the French military, ensured a continuous stream of volunteers into General Vo Giap's VM Army. Those less willing to fight could provide invaluable service to the army as porters. It was the porters or "coolies" who had hauled hundreds of mortar and artillery pieces and

ammunition across the Vietnamese countryside and up to the high ground surrounding the French base at Dien Bien Phu. It is estimated that each regular division needed approximately 50,000 porters to move equipment and supplies.<sup>10</sup>

Most of the VM regular units were formed in the Viet Bac and after 1949, at Chinese Camps at Wenshan, Long Zhou, Jing Xi, and Szu Mao. Trained by Chinese Red Army soldiers, the Viet Minh were molded into a fanatical fighting force capable of marching for days with only a few rice balls for sustenance.<sup>11</sup>

The Viet Minh 803rd Regiment had fought the French in the Central Highlands for two years and had exacted a bloody price from the soldiers of G.M. 100 since February, 1954 with ambushes and mortar attacks on An Khe. It was a price that G.M. 100 had paid in kind at Dak Ya-Ayun in March. It seemed only fitting that the 803rd would be the ones executing the ambush two months later that would signify the death knell of the French unit.

The 803rd's leadership is unknown. There is no record of any of the names of its regimental or battalion commanders, for theirs was a war of anonymity. The Viet Minh won its battles at great human cost and therefore, many of its officers did not survive the vicious fighting. A private in one battle could very well find himself leading VM troops as a sergeant or lieutenant in the next. As their struggle was one for freedom and liberty, the Viet Minh did not recognize individuals, but fought as a collective. Viet Minh leadership was different than that of the French, but it was effective enough. There was much politics in the VM Army, as commissars often worked in conjunction with the officers and NCOs who led the Viet troops to ensure their dedication to the Communist cause.

### **The Destruction of G.M. 100 – Opening Moves**

With the fall of Dien Bien Phu complete and no French reserves available to stem the tide of the imminent Communist offensive into the central plateau, the French high command gave the order for G.M. 100 to evacuate An Khe and move to Pleiku, 80 kilometers west over enemy-held road. G.M. 100 was to depart on 25 June, upon completion of the air evacuation of French civilians, high-ranking officials, and equipment from An Khe.

By the 23rd of June, intelligence reports indicated that the Viet Minh 803rd regiment was on the march to R.C. 19 from its base near An Hoa. Indications were that the 803rd had every intention of stopping the evacuation force before it could reach Pleiku. This information proved to be critical, leading to Colonel Barrou's first costly mistake that contributed to the destruction of his force. Moving the departure date up one day to the 24th of June, Barrou decided that G.M. 100 would drive 22 kilometers to Mang Yang Pass, where elements of G.M. 42 and Airborne Groupe 1 were waiting to link up and escort the An Khe convoy into Pleiku. Barrou intended to drive the distance quickly, forsaking reconnaissance and security for speed. The original plan had called for G.M. 100 to halt at kilometer (PK) 11 while one company from the 43rd Coloniale conducted a recon of the next 11 kilometers before committing the rest of the force to the narrow defiles and restricted maneuver terrain between kilometers 12-20. Barrou now called for the column to move to PK 22 in one bound. He hoped to beat the 803rd to Mang Yang Pass and was prepared to sacrifice security to do so.

G.M. 100 departed An Khe at 0300 hours on 24 June, 1954. The Cambodian-French 43rd Coloniale led the column, followed by the 2nd Korea and the 1st Korea. All three battalions had dismounted and were providing a screen for the Groupe's vehicles. Also present in G.M. 100's formation was the 520th Tieu-Doan Kinh-Quan (TDKQ or Commando Battalion), a unit comprised of Vietnamese schooled in the fighting methods of the Viet Minh and designed to close with and destroy the Communist guerilla units. The TDKQ unfortunately were an undisciplined force, and their presence in the armored column that fateful day would end up having dire consequences for Colonel Barrou and his men.<sup>12</sup>

Each of the infantry battalions in G.M. 100 had one artillery battery task-organized to them. Headquarters Company and the Groupe's mobile command posts were placed in the convoy behind the 520th TDKQ. By dawn, the column was on its way to Pleiku followed by 300 or so civilians from An Khe who had not been evacuated by air. Although it was against the orders of the French High Command to allow civilians to move with a military convoy, nobody in G.M. 100 seemed to

either notice or care. As the formation moved down the open road, French B-26 bombers destroyed the ammunition and supplies left behind at An Khe. The road march was underway.

The Viet Minh 803rd Regiment knew where G.M. 100 was going and at this point, they were in a footrace to reach Route Coloniale 19 before the French could rendezvous with G.M. 42 and AG 1. The VM knew that if the French were successful in linking up, the VM would not have the combat power to interdict their move to Pleiku. It would be critical to the mission's success that they hit the French column somewhere between PK 11 and 15.

Colonel Barrou did have one asset at his disposal he fully intended to use. A company of Bahnar tribesman led by Captain Vitasse, an elite French commando who had fought in Vietnam for over four years, was positioned in the jungle to the north of R.C. 19. Any Communist unit attempting to cross the road west of An Khe would be spotted by Vitasse and thus provide the French with early warning.

At 0900 hours, the convoy reached PK 6 and was hit with automatic small arms fire. Several soldiers in the 1st Korea were wounded, but the enemy withdrew as quickly as it had come. First blood went to the VM. As the column continued its march, the Groupe's soldiers grew increasingly edgy, sensing the dangers that potentially lay in the dense jungle surrounding them.

G.M. 100 conducted a short halt at PK 11, the initial target for the road march's first day. After PK 11, the road, surrounded by the thick jungles and rocky overhangs, passed through numerous sites along the route ideal for ambush. It was here that Colonel Barrou decided to split the convoy into four elements, each consisting of infantry, artillery and light armor, each a self-contained unit capable of defending itself if trouble arose, while preventing the entire column from annihilation in the event of a VM trap. The first element of the 43rd Coloniale, its first company led by the veteran Captain Leouzon, left PK 11 at 1250, the second element at 1300, the third at 1330 hours and the fourth and final element departed at 1400. All groups maintained radio contact as the march resumed.

At 1330, Captain Vitasse sent an urgent dispatch that G.M. 100's radio truck received: "Important! Viet Minh

elements 3 kilometers north of R.C. 19." Almost simultaneously, a French reconnaissance plane identified another VM formation at Kon-Barr, 8 kilometers north of PK 11. Soon, the 105s of 4th Battery, who had not yet left PK 11, were sending rounds at the grid the spotter plane had identified near Kon-Barr. With this critical information, it seemed the French convoy had what it needed to avert disaster.

G.M. 100's radio truck compiled the reports and relayed them down the line to the different elements of the convoy. The 520th TDKQ, 1st and 2nd Korea, 10th Colonial Artillery battalions all acknowledged the transmission. The problem was, the radio truck never contacted the 43rd Coloniale, and they were leading the march! It was never discovered how this fatal error happened, for the radio truck and its personnel were all killed in the battle that followed. However, Colonel Barrou had complained several times previously that he was short 20 radio operators from his authorized strength. Without the critical warning that the VM were at R.C. 19, Leouzon and the rest of the 43rd Colonial Infantry marched on unaware.

Luckily for G.M. 100, Captain Leouzon was a savvy jungle fighter who had seen his share of VM ambushes in his several years of fighting. At PK 15, the road stretched out into a small plain covered with 6-foot-tall elephant grass through which the road wound further west. It was quiet. Too quiet. There weren't even any birds to be seen and this made Leouzon nervous. Contacting Major Muller, his battalion commander, he requested permission to send out a screen prior to moving the entire column through the area. Muller was concerned about the time it would take to do so. He also felt that if Leouzon ran into enemy, Muller's other companies would not be able to support him with the dense vegetation obscuring their fields of fire. Undaunted, Leouzon proposed a compromise:

"Well, then let's cut the problem halfway. I'll leave the road with my company and just cut across the arc of the road through the high grass. If there is nothing that close to the road, it'll give us an additional screen, and if I get caught, it'll give you an early warning and permit you to support me without having to weaken the convoy."<sup>13</sup>

Muller gave his consent and Leouzon's 1st Company left the road and

moved cautiously through the elephant grass, attempting to move to a small hill in the middle of the plain that would afford them a better view of the surrounding area. Sergeant Li-Som, a Cambodian, and one of Leouzon's best soldiers, stopped and told his squad to be silent. He listened intently, eyes widening when he realized what he was hearing. When a large body moves through elephant grass, the long strands make a "knack" sound as they return to their normal position after having been trampled out of place. Li-Som quickly deduced that the Viet Minh were there and ready to destroy G.M. 100 as they moved through the wide open area without cover. Suddenly, two VM machine guns opened up on another platoon of Leouzon's Cambodians at a range of about 30 meters. Sergeant Li-Som charged towards the machine guns' reports, ordering his platoon with him. As he threw the grenade that destroyed one enemy gun, the other gun killed Li-Som with a hail of bullets. The time was 1420. The battle had begun.

### **The Battle and Subsequent Actions**

Leouzon's 1st Company immediately went into action, returning fire. Leouzon's RTO attempted to contact Major Muller, but his radio had been smashed by a .50 caliber bullet. Destroying the rest of the radio set so that the VM would not be able to use it, he joined the battle. The VM savaged the 43rd Coloniale with fire from their machine guns, bazookas, recoilless rifles, and heavy mortars. The 803rd was in fact fully-deployed along PK 15 and now executing a perfect ambush of a confused and disoriented foe. The elements observed by the spotter plane had apparently been decoys, for the 803rd had been in place for several hours prior to the arrival of G.M. 100. The French had lost the race to Mang Yang Pass and were now fighting for their lives.

Prior to 1420, Colonel Barrou traveled behind the armored platoon, consisting of three half-tracks and two M-8 armored cars. Barrou was in an open jeep, but moved with the Groupe's radio truck, which informed him of a light stone barricade in the road at PK 15 at 1405 hours, as reported by another light recon plane.

By 1415, Barrou noted that the lead element of the convoy picked up speed and the armored platoon widened the gap between the lead element and

headquarters company to keep up. Barrou ordered the radio truck to tell the armored platoon to slow down. Immediately after the platoon leader acknowledged the transmission, Barrou heard the machine gun burst and Li-Som's grenade explode. Suddenly, the Headquarters Company was struck by heavy mortar and recoilless rifle fire. Trucks and vehicles began exploding and the screams of men struck by bullets and shrapnel threatened to drown out the explosions.

Within four minutes, the armor platoon was destroyed. All three half-tracks and one M-8 were ablaze. The remaining M-8, though immobilized, located an enemy machine gun raking halted French vehicles on the road, and tore it apart with a blast of automatic fire. At 1425, G.M. 100's radio truck took a direct hit from an enemy 57mm recoilless rifle and exploded in a ball of fire. Anybody inside who might have explained why the 43rd Coloniale had not been warned of the presence of the Viet Minh in the area died a fiery death. Along with the truck went Colonel Barrou's ability to command and control the convoy. The 43rd Coloniale and Headquarters Company were both in contact, having to fight separate battles for survival. Chaos reigned.

Colonel Barrou and Captain Fievet, Headquarters Company's CO, attempted to rally soldiers for a counterattack on VM positions on the hill crest north of the convoy that was continuing to rake the halted vehicles of G.M. 100 with murderous fire. Fievet fell, mortally wounded, while Colonel Barrou was also hit in the thigh and rolled into a ditch next to the dying Fievet where he conferred the Officer's Cross of the Legion of Honor on Fievet before he expired.

Lieutenant Colonel Lajouanie, CO of the Korea Regiment, also counterattacked against the enemy-held hill. The surviving M-8's canister shells were suppressing the enemy positions there and it appeared that the French might be able to take the hill in a flanking maneuver. However, as Lajouanie led the attack, the M-8's gunner was killed and the VM turned their full fury on the charging Frenchmen who were mowed down by the murderous fire. Lajouanie fell near Colonel Barrou and he too, was awarded the Legion of Honor. By 1445, Headquarters Company had been destroyed as a fighting force, and several key officers of G.M. 100 were dead.

Barrou crawled to the silent M-8 and manned the vehicle's weapon attempting to bring fire on the Viet Minh positions. Unfortunately for Barrou, he was spotted and shot before he could get the machine gun going again. Barrou was knocked from the vehicle and rolled into a ditch where he resolved to die. Tearing up his identification, he lay there until a medic bandaged him. Not recognizing his colonel who lay there covered in blood, the corpsman moved on towards positions of the 43rd after providing first aid.

Major Hipolite, the Korea Regiment's executive officer, was killed shortly afterwards and Viet Minh infantry swarmed the headquarters trucks, executing wounded soldiers and continuing the G.M.'s destruction. Ten minutes after the ambush began, G.M. 100 had lost its means of communications and all three of its ranking officers. Major Muller and his 43rd Infantry were in the fight of their lives, but help was on the way. Muller did the right thing and took charge of his element, not waiting for orders from Colonel Barrou. Little did Muller know that his CO was lying in a ditch dazed from his wounds and in no condition to lead the fight.

The 520th TDKQ, normally not a part of G.M. 100 and bearing a poor reputation as combat troops,<sup>14</sup> broke and ran at the outset of hostilities, leaving the Headquarters Company and the 10th Artillery's Headquarters Battery alone to fight the Viet Minh. Truck drivers carrying engineer demolitions abandoned their trucks and ran into the jungle seeking safety. At 1500, the abandoned engineer trucks, packed with pyrotechnics and demolitions began to explode under the onslaught of Viet rounds. Shrapnel tore into French soldiers nearby, who were using the trucks as cover.

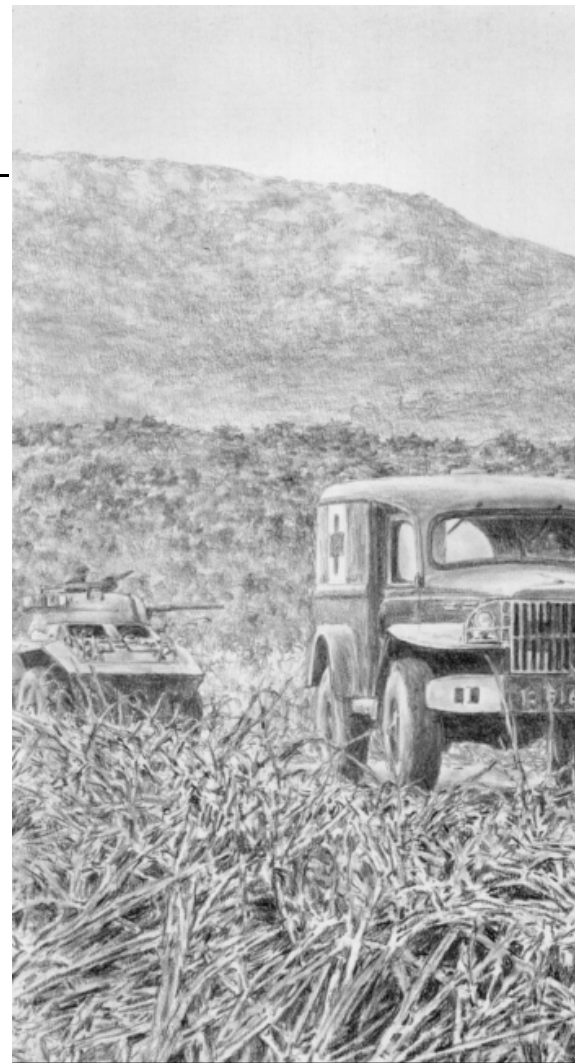
The 2nd and 1st Korea Battalions arrived shortly after 1500 and pressed forward through the mass of burning vehicles in order to link up with the 43rd. Taking advantage of the Viet Minh surprise at the arrival of two fresh battalions and their artillery, the 43rd attempted to break out with as many vehicles as they could and suffered heavy losses under the VM fire. A few vehicles from the 43rd did manage to escape the carnage and arrive at PK 22 to tell of the ambush.

Major Kleinmann, 2nd Korea's CO and the ranking officer left in G.M. 100, organized a defense around the shattered convoy. He ordered his 4th Battery to set up their howitzers and fire fuzes at minimum setting into the Viet Minh positions as enemy infantry attempted to charge the French. This action undoubtedly saved the French, as the VM attack broke under the devastating artillery fire. For the beleaguered soldiers of the 43rd and Korea Battalions, seeing the Viets cut down was a tremendous lift to their morale and they seemed infused with the elan to continue their savage fight for survival.

By 1620, ammunition was running short. Air Force B-26s arrived to provide close air support, but by then much of the fighting was occurring so close, that both French and Viet soldiers were cut down by the indiscriminate machine gun fire from the air. As dusk approached, the French realized they would not be able to hold much longer. The 4th Howitzer Battery was out of action; its crews dead and wounded, its guns out of ammunition. While the French had stopped the VM infantry attacks, enemy mortar fire rained down on the French perimeter ensuring a steadily rising casualty count.

At 1715, Major Kleinmann was ordered by French Zone Headquarters to abandon the Groupe's vehicles and break through to PK 22 on foot with his infantry and whatever wounded he could carry, to link-up with G.M. 42 and other French forces there. Kleinmann discussed options with the 2nd Korea's CO, Major Guinard. Both decided that there would be no way to carry out the seriously wounded. Having to trek a distance greater than 10 kilometers through thick jungle and doing so under fire would only create more casualties. They made the decision to leave the wounded on the road, along with all remaining medical supplies and any medical personnel volunteers willing to stay with them. The following conversation between Major Kleinmann and Major-Doctor Varme-Janville, G.M. 100's surgeon, epitomizes the self-sacrifice and dedication to the wounded that the French doctor possessed.

*"Janville, we've just received our orders. We're pulling off the road at 1900."*



*"And the wounded?"*

*"Janville — the wounded are staying here. You know there's nothing we can do for them once we're off the road."*

*"Gentlemen, I don't think I can be of much further help in this. They've got good doctors up in Pleiku but my men need me here. I'll stay with them."<sup>15</sup>*

Unfortunately for Varme-Janville, all the wounded he elected to stay with eventually died because the Viet commissars refused to allow him the supplies to treat them. It was a dark chapter in the doctor's life, for he was forced to watch his men suffer and die, all the while he was prevented from attempting to save their lives.

At 1900, the remaining soldiers of G.M. 100 broke out of the trap that had killed so many of their brethren. As they escaped into the surrounding jungle, they saw their leg-wounded comrades still with the convoy fight one last delaying action in order to buy the



rest of the infantry time to escape. The battalion commanders realized that the VM would figure out that they had withdrawn and attempt to cut them off. They decided to split the remnants of the battalions into platoon-sized groups under the command of an officer of senior NCO, to make the trek to PK 22.

For the next several days, the groups encountered impossibly dense jungles, isolated Viet Minh ambushes, and mountain tribesmen who attempted to kill and rob the French. Finally, at 1130 hours on 25 June, a platoon from 4th Company, 1st Korea encountered a patrol from the 1st Airborne Group. The battered remnants of G.M. 100 had finally reached PK 22. While these men had arrived alive, their unit, the once-proud G.M. 100 had died the day before at PK 15 on Route Coloniale 19.

#### Key Events, Outcome of Action

Sadly, for the men of G.M. 100, their ordeal was not quite over. They had to brave 55 kilometers more of enemy

road and the conglomeration of G.M.s 42 and 100, plus the 1st Airborne Group, was harassed continuously until they arrived in Pleiku on 29 June. Of the 222 men assigned to Headquarters Company when G.M. 100 left An Khe, only 84 were left. The 43rd Coloniale, 1st and 2nd Korea Battalions, containing 834 soldiers each could now claim 452, 497 and 345 soldiers respectively. The 2nd Group, 10th Colonial Artillery had only 215 out of an original 474. Eighty-five percent of G.M. 100's vehicles, 100 percent of the artillery, and 68 percent of the signal equipment had been lost. Fifty percent of the Groupe's rifles and machine guns were captured by the Viet Minh.

Colonel Barrou, amazingly, survived the destruction of his unit, and was discovered by a French patrol and carried out on a stretcher. The patrol was later captured by the VM and Barrou participated in a death march over a hundred or so miles to enemy prisoner of war camps, but he did survive the

war, and was eventually repatriated back to France.

The 803rd Viet Minh Regiment gave as much as it got and received a battalion of replacements within a day of the fight at PK 15. They quickly rejoined operations in the Central Highlands and continued to fight the French until the armistice was signed on July 20.

Because of the nature of the Viet Minh's operational security, it is not known how many casualties the unit suffered, but there is no doubt that the regiment covered itself in glory by destroying one of the best mechanized outfits in the French Army. Years later, the 803rd would return to action against another invading force. This time, the Army of the United States.

The Viet Minh's goals for destroying the French convoys en route to Pleiku were relatively simple. By demonstrating their ability to inflict massive casualties on the French Army in the wake of the disastrous defeat at Dien Bien



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*“Our armed forces committed the same mistakes the French made, fighting an enemy that was far more dedicated to the country of Vietnam than we were. Our blind fear and loathing of the spread of communism dictated that we undertake a battle we were not committed to win.”*

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Phu, the Viets could then dictate the terms of the peace agreement between France and Ho Chi Minh's Provisional Government of Vietnam. Under no circumstances did the Viets want France to retain any portion of Vietnam, nor did they want the French to feel tempted to resume the war. By destroying France's armored convoys, the Viets were kicking an enemy who was down, but they did so to send the unequivocal message that Vietnam was the victor.

The war was, for all intents and purposes, over when G.M. 100 died on the 24th of June, 1954. However, by doing what they did, the Viets hastened France's departure from Vietnam and resigned the French to the fact that until the last soldier withdrew, it was a fight to the death. France had lingered too long in a place they were now prepared to give up. Just to ensure there were no second thoughts, no serious French considerations to the feasibility of continuing the war in Indochina, General Vo Nguyen Giap, Vietnam's greatest general, continued to apply the pressure until France realized that maintaining its presence in Vietnam would come at the cost of more of its soldiers. Less than one month after the disaster at PK 15, the last French soldier departed Vietnamese soil.

Several events contributed to G.M. 100's destruction. Colonel Barrou normally was careful and made good use of reconnaissance and an advance guard when maneuvering the Groupe. When he received reports of the 803rd Regiment attempting to cut him off from Pleiku, he attempted to race the Viet Minh, rather than conduct the proper reconnaissance and security measures that might have prevented the ambush. Thanks to the independent actions of one Captain Leouzon, the column had a very small measure of early warning before the convoy came under direct and indirect fires. This action saved G.M. 100's destruction from being even more devastating than it was. Splitting his force also resulted in allowing the 803rd to mass on the lead elements of the convoy, inflicting heavy damage on them before the Korea Battalions could arrive to stem the tide.

The inability of the radio truck to notify Major Muller and the 43rd Coloni-

ale Infantry that the Viet Minh had been observed near PK 15 was critical information that might have altered the method in which Muller deployed his combat power. When Captain Leouzon requested to screen the convoy's flank, neither he nor Muller had any idea that VM forces were in the area. This critical failure in communications no doubt contributed a great deal to the deaths of French soldiers at PK 15.

G.M. 100 lost all of its leadership and command and control nodes in the opening minutes of the ambush. As a result, all three infantry battalions were fighting on their own, without coordination of any kind. The battalion commanders did a superb job of fighting their units, but without any central leadership, the French were unable to make a concerted effort to break the ring of death around them, making several unsuccessful piecemeal attacks before withdrawing into a perimeter defense. The deaths of LTC Lajounie and MAJ Hipolite, and the incapacitation of Colonel Barrou, had a devastating effect on G.M. 100 and it was only because of the discipline and leadership within the infantry ranks that the entire force was not wiped out.

The commander of the 803rd Regiment did an excellent job of choosing the appropriate ground in which to kill his enemy. He used his heavy weapons effectively, destroying vehicles and thus stacking up the convoy within his kill sack where his soldiers were able to continue to inflict devastation upon the French ranks. Maintaining a steady fire with his heavy mortars, he never allowed the French an opportunity to effectively consolidate and reorganize, and was able to easily defeat the piecemeal counterattacks. When his infantry began to become attrited during their attacks, he pulled them back to allow his mortars and heavy machine guns to weaken the French resolve. He executed a perfect ambush from which any French at all were lucky to escape.

### **Conclusions**

With the defeat of G.M. 100 came the realization that any further bloodshed in Vietnam was futile. The war had been lost before the ambush at PK 15, but a French victory over the 803rd would not have altered the armistice in

the least. France failed in its bid to retain Vietnam as a colony, not because its army was not capable of defeating the Viet Minh, but because France was not willing to pay as much of a price to keep Vietnam as its people were willing to pay for independence. France learned this lesson at a cost of over 172,178 French and French-Allied troops killed and wounded. France learned that despite having a professional army with excellent equipment, the mass and fanaticism with which the Viet Minh fought each day was more of a match for her. This lesson was there for all to see, yet the United States failed to pay attention to what happened to the French, and had to re-learn many of the lessons paid for in blood by the French Army.

Vietnam's struggles were not over with the defeat of the French in 1954. Ho Chi Minh desired to see a united Vietnam under the banner of Communism. However, South Vietnam, under President Ngo Dinh Diem, had no interest in Communism. Raised under the influence of French Colonial rule, Diem was pro-West and did not share Ho Chi Minh's vision. Minh dedicated the remainder of his life to uniting North and South Vietnam and as early as 1957, his Communist agitators began infiltrating the south in preparation for a war of unification, one in which the United States soon became involved.

Had the United States' senior leadership studied the patterns of the French-Indochina War, perhaps much of the loss this country incurred fighting in Southeast Asia might have been averted. Our armed forces committed the same mistakes the French made, fighting an enemy that was far more dedicated to the country of Vietnam than we were. Our blind fear and loathing of the spread of communism dictated that we undertake a battle we were not committed to win. The long-term effects of the bloodshed at PK 15 on June 24, 1954 can be seen in every American name written on the Vietnam Memorial in Washington, D.C.

### **The Principles of War**

**Maneuver.** The Viet Minh knew that the French column, caught in the open, would not have the time or ability to maneuver once they initiated the am-

bush. The French infantry operated dismounted, but the tall elephant grass prevented them from coordinating their attacks with other infantry and their vehicles. This lack of ability to maneuver doomed the French to having to fight a defense in the open while surrounded by enemy who had the benefit of concealment and high ground.

**Economy of Force.** Although the French convoy had over 2,000 fighting soldiers at its disposal, Colonel Barrou split his force on the road, allowing the Viet Minh to attack G.M. 100 as it piecemealed into the ambush. The numbers on both sides were about even on paper, but by the time the Korea Battalions arrived, the 520th TDKQ had been routed, the Headquarters Company had been destroyed, and the 43rd was surrounded and under heavy fire. The French were never able to mass their forces at any one point, or else they might have been successful in breaking the ambush.

**Mass.** The Viet Minh 803rd Regiment employed mass against G.M. 100 to great effect. Employing machine gun, heavy mortar, 57mm anti-armor and small arms fire against the exposed convoy, the VM succeeded with deadly effect. Conversely, the French were unable to mass, having been separated and without the means to effectively coordinate their counterattacks. The French inability to counter the Viet Minh's superior employment of mass doomed G.M. 100 from the start.

**Security.** Colonel Barrou sacrificed security at the cost of speed and many of his soldiers paid the ultimate price. By not adequately reconnoitering the area west of PK 11, he allowed his mounted force to advance blind, without knowledge of the terrain or what dangers lay ahead. In doing so, he gave the Viets the initiative and a clear advantage. The Viets knew where the French were, and the extent of their combat power. Colonel Barrou had no concept of VM locations other than the fact they had been spotted near RC 19. Instead of adjusting his plan to create some local security, he continued on blindly.

**Surprise.** The French force's lack of adequate security allowed complete surprise for the Viet Minh. Although the French had an idea they were out there, the column's lead element did not. Had Leouzon's instincts not dictated that he screen the battalion's advance through the area surrounding PK

15, the surprise might have been complete and the entire column might have been caught on the open road. As it was, the Vietnamese still benefited from surprise and used it to great effect.

**Unity of Command.** G.M. 100 had plenty of leadership, yet disaster struck in the opening minutes when the top three ranking officers went down. Because the other battalion commanders were in the midst of the fight for their lives, nobody took charge until Major Kleinmann arrived 40 minutes after the ambush began. In those 40 minutes, the entire armor platoon was destroyed as well as most of the convoy's vehicles. Kleinmann inherited chaos and did the best he could with it, but by the time he arrived, the ability for the French to seize the initiative had passed and the battle was firmly in the hands of the Viet Minh. Barrou had no concise plan for countering an ambush, nor did he provide any guidance to his subordinates on what to do should he be taken out of action. As a result, critical time was lost in re-establishing a chain of command, and with that time went G.M. 100's ability to win the battle at PK 15.

### Epilogue

The men of Groupement Mobile 100 were some of the best in the French Army. They had "faced the elephant" on numerous occasions in the highlands of Vietnam over the previous year and were some of the most experienced and professional troops anywhere in the world. The 1st and 2nd Korea Battalions had won battlefield glory at places such as Chipyeong-Ni and Arrowhead Ridge several years before and were proud of it. Yet, as those veterans would soon discover, "Indochine no est Coree." Vietnam is not Korea. G.M. 100 died at PK 15 because of a series of mistakes that compounded to create a battle they had no chance of winning. Poor judgment on the part of the Groupe's senior leadership lost the lives of many of its troops, just as outstanding leadership at the junior level saved many more. Such is the way of war. LTG (Ret.) Harold G. Moore perhaps summed up G.M. 100's fate best in his book, *We Were Soldiers Once.. And Young*.

*"Shortly after we arrived in Vietnam, Sergeant Major Plumley and I took a jeep and a shotgun guard and drove ten miles west of An Khe on Route 19, into no-man's-land, to the PK 15 marker post. There, the Viet Minh had de-*

*stroyed most of French Group Mobile 100 in a deadly ambush 11 years earlier. We walked the battleground, where a bullet-pocked 6-foot-high stone obelisk declares in French and Vietnamese: 'Here on June 24, 1954, soldiers of France and Vietnam died for their countries.'...Plumley and I walked the battleground for two hours. Bone fragments, parts of weapons and vehicles, web gear and shell fragments and casings still littered the ground. From that visit I took away one lesson: Death is the price you pay for underestimating this tenacious enemy."*<sup>16</sup>

### Notes

<sup>1</sup>Bernard B. Fall, *Street Without Joy* (Stackpole Books, New York, 1964) p.187-188.

<sup>2</sup>Fall, p. 190.

<sup>3</sup>Jim Mesko, *Ground War - Vietnam 1945-1965* (Squadron Signal Pub., Carrollton, Texas, 1990) p. 3-4.

<sup>4</sup>Fall, p. 186.

<sup>5</sup>Mesko, p. 6.

<sup>6</sup>Martin Windrow and Mike Chappell, *Men-At-Arms Series: The French Indochina War* (Osprey Military Publications, Wellingborough, UK, 1998) pp. 16-17.

<sup>7</sup>Robert Barr Smith, *Men At War* (Avon History, New York, 1997) p. 349.

<sup>8</sup>Fall, p. 193.

<sup>9</sup>Fall, p. 189.

<sup>10</sup>Windrow, Chappell, pp.20-21.

<sup>11</sup>Windrow, Chappell p. 21.

<sup>12</sup>Fall, p.206.

<sup>13</sup>Fall, pp. 210-211.

<sup>14</sup>Barr-Smith p. 350.

<sup>15</sup>Fall, p. 218-219.

<sup>16</sup>Harold G. Moore and Joseph L. Galloway, *We Were Soldiers Once...And Young* (Harper Perennial, New York) 1992 p. 49.

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# Light-Heavy Integration at the JRTC

## Part 3 - Offensive Operations

by First Sergeant Paul E. Thompson Jr.

*This is the third article in a series written to help armor platoon leaders or platoon sergeants facing light/heavy situations, either at the Joint Readiness Training Center (JRTC) or in an actual deployment. The first article (July-August 1998) discussed the Joint Readiness Training Center and some tried and true tactics, techniques, and procedures. The second article (September-October 1999) covered defensive operations. Both articles are available on our web site at: [www.knox.army.mil/armormag](http://www.knox.army.mil/armormag) under the "Back Issues" link.*



Several different things must be taken into consideration when planning offensive operations in a light/ heavy environment. In order to make it easier to plan, we have broken down the information by Battlefield Operating Systems (BOS) elements and by the planning, preparation, and execution phases.

### Planning Phase

During the offensive phases of light/heavy operations, there are times when an armor platoon leader (PLD) will find himself task-organized to a light infantry company. During the planning phases of an operation, it is absolutely critical that the tank PLD be involved in **all** phases of the rehearsal process.

In developing his OPORD or FRAGO, the infantry commander must pay close attention to the capabilities and limitations of the tank platoon in his task organization. Having a tank platoon in the light company can considerably change the way the light company does business.

As he prepares his OPORD or FRAGO, the tank platoon leader must coordinate with the infantry company commander on several things. It is key that the infantry commander understands that the tank PLD and platoon sergeant (PSG) are the resident armor experts. Though briefing a commander

will provide him with cursory understanding of armor equipment, it is important that those who know the equipment fully be identified and relied on. Make sure the commander addresses routes, intervals, movement speeds, orientations, fire control measures, signals to be utilized between platoons, communication, and IFF procedures.

### C2

A command and control consideration for the company commander is to use the tank platoon to eliminate the most serious threat to the company. Use tanks against tanks. Guard against "piecemealing" the tank platoon. Plan for maintenance time — tanks *have to have it!* Plan for the tank platoon as a company reserve if it has no immediate mission. In order for an infantry company commander to be able to plan and execute the maneuver, organization, and control of an armor platoon, he must understand it.

### Intelligence

The commander should supply the armor PLD with the following intelligence, and if the commander does not furnish this information, the PLD should request it. The commander

should have the platoon leaders identify and plot known and suspected enemy positions (that may affect their platoons), and the direct and indirect fire range fans of enemy weapons systems. The enemy overlay in IVIS or appliqué digital systems will be updated. Periodically, the commander must ensure platoon leaders identify terrain features or determine standoff distance of friendly weapons systems to negate the effects of enemy weapons. Platoon leaders must determine the enemy's most probable course of action in their area of operations. They should also ID and rehearse anticipated contact situations such as:

- Will the enemy defend, delay, or counterattack?
- Where and when is contact most likely?
- What type and size of force will the platoon face?
- What type of weapons will they face?

The company commander should use the armor PLD to help decide the tank platoon's best route. If possible, use cavalry scouts to recon the route ahead of the platoon because they are experts at determining the trafficability of routes for various types of vehicles. Assigned some light infantry and engineers, they can also pre-breach obstacles covertly.

Other intelligence considerations are to always plan for the use of the tank platoon's thermal sights. Thermal sights can be a terrific asset to the company. Plan to use the tank platoon in the reconnaissance, counter-reconnaissance, and security roles. The tank's mobility and tremendous firepower is valuable. Also, plan to use armor as part of a deception to mask the main effort, or the use of PSYOPS loudspeakers to confuse the enemy about the true direction from which the armor is coming.

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## Maneuver

The commander must synchronize the armor platoon's maneuver plan with his commander's intent and his specific instructions. The addition of the armor platoon can make a difference in the planning timeline. Tank platoons bring an immense firepower capability to the light infantry commander, and every effort must be made to maximize their potential. Also keep in mind the additional observation capability of the tanks. A commander should not have tanks in the woods while an infantry platoon is overwatching a valley where the platoon's weapons ranges are minimized.

Additionally, the commander must address restrictions on fire (either imposed by ROE, or based on the types of ammunition carried in the tank platoon). It is important that the tank platoon has a copy of the tactical rules of engagement.

Some additional considerations on maneuver are to always consider the suitability of the terrain for movement of the company and its tanks. The commander must make a conscious decision to either concentrate or distribute the tank platoon. The armor platoon leader should do his best to at least keep his tanks or Brads in sections for mutual support. Remind the commander that in areas that are restrictive for tank movement, i.e., in heavy woods or MOUT areas, that the tanks will need infantry attached for local security, to guard against ambushes, and as additional LP/OPs. Also remind the commander that tanks provide excellent direct fire against field fortifications.

## Fire Support

Platoon leaders should review the fire support plan. The commander should fix responsibilities for initiating, lifting, and shifting indirect fires. The armor platoon leader should make sure the plan supports his maneuver. If the platoon has priority of fires, make sure there are enough pre-plots to support your maneuver. When you are half way between pre-plots on the map, shift your priority target to the one you are approaching. The field artillery battery in support should be laying a platoon on that target to get you the most timely fire support if you have priority of fires. Consider the use of smoke to help conceal or obscure movement, suppress likely enemy positions while platoons are moving through danger areas, and to mark and/or assist in navigation.

Some additional considerations are that the tank platoon has no Forward Observer (FO). All their fires will be requested over the company net by the armor PSG. Plan for the tank platoon to receive enemy indirect fire as it approaches an obstacle. If AC-130 sorties are expected during your operation, ensure the tank platoon is marked on top of the turret with copious amounts of glint tape for night operations and VS-17 panels for day in a prearranged symbol and that it is then coordinated with the Air Force liaison at the brigade TOC or immediate higher headquarters. This will hopefully prevent a fratricide on the company's most important asset (and its soldiers).

## Mobility and Survivability

While planning breach drills, the commander must designate the tank platoons as part of the support, breach or assault force. Being the support or assault force is not a problem, but the tank platoon will only be designated as the breach force if it is equipped with the assets required to breach the type of obstacle present. At JRTC, things are done a little bit differently than at other CTCs. Since the mine threat is always present and the reseeded of said minefields is continuous if minefields are not overwatched, the rollers and plows are always mounted on the tanks. A plow and roller, or better yet two sets, are crucial in light/heavy operations. Some other assets could be demolitions or grappling hooks. Since most tankers are not trained in the use of demolitions these days, the PLD will want to iron this out with the commander prior to blowing up a much-needed crewman performing a task he is not trained to do. Grappling hooks are great for removing wire during a breach drill. Know the capabilities and limitations of mine plows and rollers. Rollers are only to be used to detect the leading edges of a minefield and to proof lanes. The plow is used to clear a path with the roller following the proof. Be aware that there is a gap in the center of the area that is uncleared. The dogbone may detonate mines in this uncleared path, but it is by no means foolproof. Also remember that every hit taken on the plow or the roller will degrade its ability to be used further. Finally, remember that the M1's thermal sights can help in the visual acquisition of mines. If the mine is metal or of a dark color the sun will heat it up to a temperature that exceeds the temperature of the surrounding soil. This allows the mine to be picked up in some circum-

stances by an alert gunner scanning on his thermal sight. But this is in no way a guaranteed acquisition means, but rather an additional way of looking for mines. There are many factors that have to be right for you to be able to see mines with the thermal sight. What it boils down to is that countermine warfare has changed little since WWII and looking for the right indicators and the use of your mechanical and manual means of mine detection are your best bets. The PLD should ask the company commander to request additional engineer assets to support the tanks if the mine threat is high.

## Air Defense Artillery

Tank platoons should get high priority for ADA protection as they will be a much sought after target by enemy air (if there is any). During the day, place a VS-17 panel on top of the tank to ID the platoon to friendly air assets. The use of glint tape at night has already been addressed.

## Combat Service Support

The PLD and PSG (especially the PSG) should be intimately familiar with the company's CASEVAC plan. If there isn't one, then ask the commander or company 1SG to put one in writing and also ask for a CSS overlay to ID casualty collection points, aid stations, air evac points, and company trains. Make sure the company 1SG knows your needs. He will probably be flabbergasted, especially by the amount of fuel you'll need, but to sustain you he must be made aware. A platoon of M1s uses a lot of fuel, so coordination will have to be made between the light infantry 1SG and the heavy team 1SG for resupply and rearming. In some cases, it is better for the tank PSG to make direct coordination with the heavy team 1SG.

Make sure the commander and 1SG of the light company knows that a tank platoon can only sustain itself for 24 hours (at the outside). If operations are ongoing, that will decrease the time the platoon can sustain itself, especially for Class III. Plan for 30 minutes to an hour to refuel/rearm a tank platoon depending on weather and time of day or night. Since the sustained combat capability of the tank platoon is directly related to its logistical support, plan for recovery, and don't forget the need for maintenance time. You could use the tank platoon to carry extra water, ammunition, and Class I for the company, but be aware that there are limits to

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what a tank can carry and still have good observation. The tanks can also be useful to conduct emergency resupply for the company in hot areas.

## C2

As in any operation, conduct PCCs and PCIs as part of your planning phase. *FKSM 17-15-3* has a great detailed checklist for this. Ensure all crewmen are familiar with standard infantry hand and arm signals. Make sure the tanks have TA-1s hooked up to the right side of the turret for communication with dismounts. Make sure each soldier understands the plan. Ensure the PSG reviews the supply status of rations, water, fuel, oil, all types of ammunition, pyrotechnics, first aid kits, combat lifesaver bags, and batteries. "Don't expect what you don't inspect" is a good rule to follow when preparing for an operation. There is nothing quite as embarrassing or frightening than finding out that a piece of equipment critical to your operation does not work. "Murphy" is everywhere, so make sure that if the equipment is critical you have an alternate plan if by chance it does not work after you have checked it. Conduct a safety briefing with the light infantry concerning operating with tanks. Include riding on and moving around tanks. Ensure tank crewmen understand the movement plan of the infantry platoons. TCs must understand the company scheme of maneuver. Other crewman must understand the platoon scheme of maneuver.

## Intelligence

Receive all updated spot reps and friendly actions. Ensure overlays on maps and in IVIS (if M1A2) are updated. As the commander adjusts his maneuver plan, adjust the platoon maneuver plan accordingly.

## Maneuver

When conducting rehearsals, require leaders to be there. Have those with specific tasks carry out those tasks as closely as possible. Tank platoons bring a complex, different system to the light infantry company.

To maximize their synchronization with the rest of the unit, rehearsals should include coverage of the following events: movement from current positions, routes to be used, transporting infantry, platoon and company formations and movement techniques,

weapons orientation and fire control, decision points, actions on contact, actions on the objective, reporting procedures, and signals.

Some other maneuver considerations are to avoid maneuvering the tank platoon in single file if possible. Do not use plow tanks to "break brush," as they are not designed to do this. A broken plow tank is of no use in mine-clearing operations.

## Fire Support

When the company commander employs fire support in the offense, it is to achieve a variety of goals. Based on the maneuverability and the speed at which the tank platoon can move, the following are critical to effective implementation of the fire support plan:

- Suppression of likely enemy anti-tank systems that could inhibit movement.
- Fixing or neutralizing bypassed enemy elements.
- Preparation of enemy positions for an assault. Preparatory fires are used during a deliberate attack, with fires placed on key targets before the assault begins. The commander must weigh the benefits of preparatory fires against the potential loss of surprise.
- Obscuration of enemy observation or screening of friendly maneuver. The company can take advantage of smoke in various maneuver situations. Tanks can also generate smoke through firing their on-board smoke grenade launchers or on-board smoke generators if using the correct fuel (diesel, not JP-8). If you want to take advantage of this asset, plan for the use of it.
- Support of breaching operations. Fires are used to obscure or suppress enemy elements that are overwatching reinforcing obstacles.
- Illumination of enemy positions. Illumination fires are included in contingency plans for night attacks.

## Mobility and Survivability

The light infantry battalion task force may be augmented with engineers. This could include MICLICs, ACEs, or AVLBs. Actions at obstacles should be rehearsed to include suppression, obscuration, security, and reduction (SOSR).

Some other considerations are that tanks carry grappling hooks, which are useful in removing wire. Also, use the tank platoon to scan for mines with direct vision and with thermals.

## Air Defense Artillery

Get information from the commander regarding templated enemy fixed wing and helicopter corridors. Try to plan the tank platoon's movement and its ability to engage in your plan.

## Combat Service Support

Make it known that the tank platoon must have a coordinated, timely, and effective resupply operation. The CSS rehearsal should cover all aspects of the logistical plan to include resupply and personnel and vehicle evacuation procedures. If the rehearsal does not cover your needs then ask about them and get an answer.

## Offensive Ops: The Execution Phase

Overwatch is the tactical mission in which an element observes and provides direct fire support for a friendly moving element. Of all the elements in the light company, a tank platoon task organized to them can best execute this mission. On the other hand, in restrictive terrain, infantry will be required to overwatch or provide local security as the tank platoon moves through restrictive terrain. The overwatch element must have communication with the unit being overwatched and scan gaps and dead space within the moving element's formations. Plan on the maximum bound for overwatched element to be a third of the overwatched element's weapons systems range, METT-T dependent. In restrictive terrain, this will be a much shorter distance. Overwatch elements must also remember to provide 360-degree security for themselves.

Other tactical movement considerations are to never move directly forward from an overwatch position or BP. Stay on low ground as much as possible to avoid skylining yourself. Scan the ground for disturbed earth, out of place terrain features, and surface laid mines. All platoons must plan actions at danger areas.

## Offensive Ops: Tactical Tasks

There are nine tactical tasks that the tank platoon may be called upon to execute. Execution of these tasks



# LETTERS

## The Race Across France: Who Led the Way?

Dear Sir:

The article about the 4th Armored Division (Sep-Oct 2000, MAJ Don Vandergriff) was an excellent example of armored warfare in WWII and the use of combined arms teams to accomplish the mission. However, the 4th AD was only one of the many armored divisions to employ these same tactics.

The fourth paragraph cites the breakout from the Normandy beachhead, and how, from that point, the 4th AD led the "rest of the Army" across France and into Germany.

The 5th Armored Division also participated in that breakout and was called Patton's Ghost Division because the media was not told of its involvement initially. We liberated Le Mans, made a U-turn to help form the Falaise Gap at Argentan, were relieved to head toward the Seine River just north of Paris. Next was a march through Paris and, within a few days, we reached the Belgian border.

New orders were to take the Prince of Luxembourg into his country and liberate it, which we did. Additionally, CCR was the first American unit to breach the Siegfried Line at Wallendorf on 14 September 1944. We were stopped by new orders and came back into Luxembourg.

Other actions included being the only armored division to fight in Huertgen Forest. Then, after crossing the Rhine River, we raced across Germany to the Elbe River and were the closest American unit to Berlin when hostilities ceased.

To repeat, the 4th AD did not lead the 5th Armored Division across France, Belgium, Luxembourg, Holland, and Germany.

ROBERT M. HERMAN  
LTC, Armor (Ret.)  
Former member of C Co, 628 TD Bn.  
(Attached to CCR 5th AD)

## Flawed Planning, Not Politicians Doomed Early Korea Fight

Dear Sir:

The article about the Army's unpreparedness for warfare in Korea ("Tanks and the Korean War...", Sep-Oct 2000) completely misses the real problem of the Army's history of flawed planning. It is easy to blame politicians for the Army's financial woes, but the catastrophic decisions were made by generals. Even bad political decisions are usually due to unrealistic, overly-optimistic, or plainly false reports provided by uniformed leaders.

Lamenting a lack of advanced tank technology is off the mark. Our M46 Pattons and M26 Pershings completely outclassed the enemy's T-34/85 tanks, while even our older M4 Shermans were at no technical disadvantage.

The problem was that Army leaders earlier decided that Korea was unsuitable for tanks

and never planned for their employment. Tanks were poorly maintained or simply worn out, and crews were poorly trained, but these are problems of command priorities, not "technology." To save operational and support costs, generals even convinced themselves that a company of light tanks, M24 Chaffees, could substitute for the divisional battalion and three regimental companies of Patton or Pershing tanks that were organic to an infantry division. All was ignorant bliss.

Our leaders knew neither the terrain, the enemy, nor their own lack of capability. Soldiers were untrained, equipment was worn out, and *ad hoc* light forces attempted to stop a conventional combined arms team that kicked their butt all the way to the Pusan Perimeter. Eventually, heavy forces arrived in theater and stabilized the situation, while an amphibious assault (something that Chairman of the Joint Chiefs GEN Omar Bradley, himself, had earlier pronounced would never happen again in modern warfare) broke the enemy's logistical tail and shattered his forces.

Why does this matter? Because the Army needs to understand what was wrong in order to learn and avoid similar mistakes. The worst lessons are the false ones. As a profession, the Army cannot keep blaming its difficulties on politicians when its own leaders bring about disasters through their own ignorance.

More than a decade later, Army leaders repeated the very same blunders in Vietnam. Again, they decided that the terrain was unsuitable for armor, especially M48 Pattons, and stripped away divisional tank units when deploying troops. It was left to the ARVN to teach their U.S. advisors how to employ M113 APCs as what would be known as ACAVs, or Armored Cavalry Assault Vehicles. This eventually led to the Infantry Fighting Vehicle (IFV). The lesson was plain: The side with armored firepower has the advantage.

Despite the Army's tremendous success during Desert Shield and Storm, it again (or still) seeks to rapidly toss light forces into harm's way because it refuses to plan for deploying the required logistical tail. Today's Army is ignoring maintenance and allowing equipment to deteriorate because it is confident that an as yet undefined technical breakthrough will solve everything. The same complacency that led to Task Force Smith fifty years ago is now risking everything on an interim light force to accomplish the very same thing, with potentially the same results.

CHESTER A. KOJRO  
LTC, AR (Ret.)

P.S. On page 10, the two tanks in the lower left and right photos are not M46 Pattons, but M26 Pershings. Compare them to the M46 tanks in the photo directly above. The M26 rear drive sprocket is much lower in relation to the return rollers, and there is no idler wheel behind the No. 6 roadwheel.

should be covered in the company OPORD. Platoon leader, ask the question! The answer could save the life of your platoon. The tank platoon can use the tactical tasks as courses of action when it executes actions on contact. The following are the nine tactical tasks.

- Task 1 - Destroy an Inferior Force
- Task 2 - Attack by Fire
- Task 3 - Overwatch/Support by Fire
- Task 4 - Assault
- Task 5 - Bypass
- Task 6 - Reconnaissance by Fire
- Task 7 - Hasty Occupation of a Platoon BP (Hasty Defense)
- Task 8 - Hasty/In-Stride Breach
- Task 9 - Clear a Danger Area

Some of the preceding information is covered in the draft copy of "Tactics, Techniques, and Procedures for Light Infantry Company Employment of Tank Platoons in Restrictive Terrain." It may or may not be the actual beginning of doctrine for Light/Heavy Integration for the U.S. Army. This information and the additional remarks are to give Armor leaders a starting point for reference. Again, there are probably plenty of old tankers and cavalymen out there who could undoubtedly teach us more. If you have any comments, please forward them to:

Operations Group-Bde C2  
Attn: Armor/Mech Team  
7154 Alabama Ave.  
Fort Polk, LA 71459-5313

Or contact us e-mail at [harzbepd@polk-emh2.army.mil](mailto:harzbepd@polk-emh2.army.mil).

1SG Paul E. Thompson Jr. enlisted in the Army in 1976 as an Indirect Fire Infantryman. His assignments include 2-325 AIR and 1-320 FA in the 82nd Airborne Division; 4-333 FA, 428th FA Brigade; 2-64 Armor, 3rd Infantry Division; Cincinnati Recruiting Battalion, Recruiting Command; 4-67 Armor, 1st Armored Division; and Operations Group, Joint Readiness Training Center. He recently served as the First Sergeant of E Co., 1-81 Armor at Fort Knox, Ky.

# Training in Korea's Unusual Terrain

by Captain Michael S. McCullough

*"The commander of the lead tank, Lieutenant James Mace, set off, blazing away at the surrounding peaks with his turret-mounted machine gun; the riflemen riding his tank's upper deck emptied their M-1s as fast as they could reload. Incoming Chinese slugs splattered the hull...Three miles down the road Lt. Mace let out a yell. The column ground to an abrupt halt. An empty M-39 utility carrier blocked the crown of the road. Abandoned beside it stood a Sherman tank and a two-and-a-half-ton truck. The men of George Company, led by Lt. Knight, jumped off the tank as bursts of Chinese machine-gun fire poured in from both sides. The lieutenant realized with sudden shock that the Chinese must have been in position for at least the last day and a half, strung out in strength for miles along the Sunchon Road. The 2nd Infantry Division had raced into a trap. Five frightful miles from the departure line the column entered the gully on the highest point of the Sunchon Road. Americans called it "The Gauntlet." Those who entered it and lived to tell the tale never forgot what followed."*

— Enter The Dragon by Russell Spurr

Soldiers of the 2nd Infantry Division train and will potentially fight on this hallowed ground, not far from where the battles in "The Gauntlet" took place. Nearby is a training area known as "Twin Bridges," site of the division's recent Warsteed 2000 exercise.

In order to conduct large-scale maneuver exercises in Korea, units must road march to Twin Bridges, which is used by both U.S. and Republic of Korea (ROK) Army units. Complicating the arrangement are the South Korean citizens who live nearby and commute through the training area, regardless of any exercises in progress. Twin Bridges is approximately 3 km wide and 9 km long, expanding north and south, and is composed of two primary training areas, "the southern bowl" and the "defile" that is located farther north. The terrain can be described as having high ridges, numerous draws and spurs, roads ranging from hardball to trails,

creek beds large enough for tank movement, and thick vegetation in the spring and summer which grows sparse in the winter. Twin Bridges is approximately 12 km south of the Demilitarized Zone (DMZ).

The 2nd Infantry Division is uniquely task-organized for its mission in the Korean theater, the only Army division that includes armor, mechanized infantry, and light infantry forces. During Twin Bridges training, units are commonly organized as a combination of light and heavy task forces. Mechanized infantry and armor battalions conduct maneuver training at Twin Bridges one to two times a year. Normally, one rotation focuses on platoon and company lanes for one week and a second rotation focuses on company- and battalion-level operations.

One of the most recent rotations, "Warsteed 2000," was conducted by TF 2-72 AR last winter from 20 February to 12 March. The OC team was trained internally by 1st Brigade and fielded by 1st Battalion, 72nd Armor. The training unit, TF 2-72 AR, was composed of A, B, and D Companies, 2-72 AR; C Co, 2-9 IN; A Co, 1-506th INF; and B CO, 2nd ENG. The engineers brought the ACE, MICLIC, volcano, and bridging assets to the training.

The maneuver event can be broken down into three phases: Phase I: platoon lanes in the southern bowl; Phase II: company lanes in the southern bowl; Phase III: company lanes in the defile that resembles the terrain of "The Gauntlet."

Each mission was based on a two-day cycle. Day 1 Morning: execution, and AAR. Late afternoon: battalion OPORD issued. Day 2: Planning and rehearsals.

We called a training concept used during Warsteed 2000 "Linked Lane" training. Depending on the success of the platoon or the CO/TM, the lanes ran independently or the lanes cross-talked and fought together. This enabled the platoon leaders to exercise adjacent unit coordination and CO/TM commanders to develop techniques of pass-

ing the information or the battle to one another.

**Phase I:** The platoons executed one week of lane training focusing on the breach, support by fire, defend, and assault missions. The battalion commander, the company commander, and staff served as OCs. Each company had a lane and, depending on the success of each platoon, there was the potential for three platoons maneuvering simultaneously, or "re-cocking" and executing their task as many times as needed to train the platoon. The OPFOR for platoon lanes consisted of dug-in light infantry supported by a tank or a Bradley.

**Phase II:** TF training was executed in the second week. Missions for the CO/TM lanes in the southern bowl were SBF, assault, breach, and defend. The OPFOR, a large number of dismounted infantry, replicated the large numbers of North Korean infantry and Special Operation Forces (SOF) that we would encounter during a war. The defenders typically fought with one mechanized infantry platoon, two tank platoons, and a light infantry platoon.

**Phase III:** The TF conducted a brief road march north and occupied new assembly areas in order to prepare for the defile fight. In the defile, the missions changed to advanced guard, breach, assault, and defend. Mechanical smoke provided an additional asset for our training in the defile. Warsteed 2000 ended with a 30 km tactical road march back to Camp Casey.

### Key Lessons Learned

**Observation 1.** "Don't Be Bound By the Book."

As commanders and leaders, we need to incorporate practical application of doctrine through TTPs based on METT-TC. However, we observed that soldiers and officers try too hard to apply the material in our doctrine verbatim to the situation on the ground. We must remind ourselves that publications are a reference and a starting point. Obviously, the way we fight in

Korea is different than the way we fight in the desert, which is different than the way we fight in Europe. No single FM applies to all theaters. During movement and maneuver techniques, we often observed examples of doctrine applied in the wrong place. In Korea, platoons are most likely to travel on a road in column or bound. There is very little space for the wedge, vee, or line formations. Unless it is winter and rice paddies are frozen, and the unit is moving through a large valley, platoons will not be able to conduct alternating or successive bounds by section. Many situations in a Korean terrain-based conflict require tanks to bound individually.

It was observed during Warsteed that both lieutenants and captains believe that a section of tanks must bound in unison. Unfortunately, in the defile this is a good way to be killed. The terrain is very restricted and draws provide an excellent place for enemy infantry to hide and wait until the vehicles pass so that they can engage targets from the rear. In order to move securely, there will be times when a crewmember must dismount the tank and conduct a recon around a choke point or terrain features such as spurs. "Death before dismount" means exactly that. If you don't dismount, you will die. Dismounting is an approved technique found in Chapter 2 of *FM 17-15*.

**Observation 2:** "The Third Dimension."

Warfighting in Korea can be best described as a three-dimensional fight. Korea has a plethora of ridges and draws that add to the equation. The draws become excellent "keyhole" locations where the enemy can hide and wait to ambush tanks as they pass by. To aid in command and control while fighting through the defile, an effective technique is to number the draws, valleys, and ridges, just as the infantry numbers windows during urban missions. In addition, we describe target locations in relation to elevation, "high, medium, and low." One way to use the described methods in a contact report is, "Contact VTT, draw two, medium, out." This quickly orients weapon systems and enhances target acquisition. During an AAR of the defile battle, the task force commander used the analogy of police officers clearing a room. We have all seen the technique where one cop puts his shoulder into one side of the doorway and scans. Once clear, his

partner repeats the steps in the opposite side of the doorway. That is a good method to use when clearing the defile. The same technique can be used within a tank section.

There are scenarios that require tanks to conduct individual movement techniques similar to those of a dismounted team. A perfect example of how to maneuver is in *STP 21-1-SMCT, Common Tasks*, "move under fire." If you replace the individual with a tank and double or triple the distances, a leader will have a great guide on how to maneuver the tank.

Another bad habit is the cavalry charge when the order to "assault, assault, and assault" comes over the net. The cavalry charge will either put you into a minefield or suck you into a kill sack. When an assault is initiated, it should be the last maneuver before you seize an objective. Platoons leaders still need to bound and continue to develop the situation.

**Observation 3.** "Belt Buckle Defilade."

No one likes to fight closed hatch or open protected when they first arrive in Korea, but Korea is the last place you would want to maneuver standing exposed in the hatch. Next to artillery, the next most likely form of contact in this situation will be a 7.62 round through a loader's or TC's head. Instead, fight in open protected or closed hatch. While it takes training to fight from this position, it protects a soldier from bullets and roll-over injuries as well. Over the years, the armor force has lost too many soldiers to roll-over accidents. If our crews are trained to fight open protected during operations in hazardous terrain, we will significantly improve our force protection and minimize crew fatalities.

Another mistake is to pop out of the hatch when you reach the objective. Numerous casualties occurred during Warsteed when crewmembers did this. The OPFOR waited until BLUFOR secured the objective. Crewmembers opened hatches and went "admin" instead of completing consolidation — then the OPFOR threw satchel charges into hatches and called air-burst mortars.

A tight load plan is an implied task for fighting open protected. The 2-72 AR has added bustle rack extensions made

of scrap metal and engineer pickets to provide room to store equipment and prevent the load from rising above the EAPU. At that height, the TC can see behind him. Additionally, many units like to bolt an extra road wheel in front of the loader's position for added protection. However, if a tank makes contact the loader will likely drop and close the hatch. Now the loader has a road wheel in front of his periscope that isn't moving anytime soon. The training objective is to get the loader to be able to scan from a low position (reducing his signature) and be able to operate his periscope effectively without a blocked view.

**Observation 4.** "Rehearse, Rehearse, Rehearse."

We have all heard this a million times, however, our junior leaders given time to conduct platoon rehearsals may need some strong guidance for the first few missions. A great reference is *FM 17-15*, page 3-8, under Maneuver. Another lesson learned is that every leader and slice element must attend all the OPORDs, FRAGOs, and rehearsals. It's the one person or element that you don't think needs to be there that will cost you the most. An example was when the mine plow and the MICLIC both died in the breach and the ACE was sent forward. The driver of the ACE, a one-man vehicle, was unfamiliar with the execution and not present at the rehearsal. He drove off the lane and was destroyed.

One method 2-72 AR developed to aid C<sup>2</sup> and rehearsals is incorporating a driver's sketch card into our TACSOP. Time permitting, all drivers, regardless of mission, should receive them. An old lesson re-learned is that prior to a rehearsal, a platoon leader must do a good map recon and designate sectors of fire before SP — this saves time and reinforces C<sup>2</sup> when in contact. Also, units should rehearse engagements in order to prevent TCs from getting tunnel vision when engaging personnel carriers. Where there is one personnel carrier, there is a squad of infantry out there and that dismount squad will cause the most damage.

Rehearse what you will do in the attack position, especially before the breach. Mounting rollers with or without the aid of an M88 can be an emotional experience for untrained crews. Rollers have been known to fall off if

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*“In Korea, most armor units are on their fourth iteration of the new TTVIII. Though the new table is fun and challenging, it does not necessarily represent the North Korean forces that we will face.”*

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not properly fitted. It is very important that crews and leaders understand the realities of plow and roller operations. It is difficult to simulate real-world conditions, but if we don't try, we risk teaching bad habits that will get our equipment and crewmembers killed. An example: knowing (and the OCs enforcing) the speed, depth, and number of hits a plow or roller can take, along with knowledge of the type of enemy mines, will allow more realistic training.

While in the open protected hatch position, TC observation is very limited. Loaders and drivers need to be trained (and rehearse) identifying surface-laid mines and indicators of buried mines from their positions. Units should attempt live rehearsals, regardless of training space, even if there are only a few hundred meters or less. Tank crews will benefit from the training. Furthermore, if there is time, crawl, walk, and run your rehearsals and use terrain boards. The more times soldiers rehearse, the clearer the commander's intent will be.

**Observation 5.** “The Light Fighters.”

Light infantrymen are one of the most valuable assets a CO/TM commander can have in the defile, and they provided outstanding results during Warsteed. They often moved forward, getting eyes on or engaging dug-in targets that allowed tanks to move into an advantageous position.

A key player when working with light infantry is the driver of the 5-ton or LMTV. Normally, the truck will come from the HHC and you may not get it early enough to fit it into all your planning. A 5-ton will carry a platoon of light fighters. If that driver is unfamiliar with the plan, he may expose himself. With one enemy tank round or ATGM, a CO/TM commander will lose one-third to one-fourth of his combat power. Don't lose your dismounts because you didn't have the driver at the rehearsal. Rehearsing with light infantry was and is critical. Enemy and friendly dismounts look the same in a thermal sight, so it is paramount that

good visual signals be developed and rehearsed. Training tankers to verify troop targets with the GAS is an important fire control technique. At a minimum, have your tankers watch a trench-clearing rehearsal so that they know what it looks like through their sights. Time permitting, incorporate both tanks and dismounts into rehearsal.

Command and control is very different in the heavy and light worlds. Because of the speed and distances that armor can travel, our graphic control measures are normally spread out. When working with dismounts, leaders need to include more and closer graphic control measures, not only to track movement, but to enhance force protection. Commanders must talk to the infantry platoon leader and platoon sergeant to get a good estimate of how long it will take for them to patrol or move from point A to point B. It's a rude awakening when you discover that your execution will take 2-3 hours longer than you anticipated because you had them dismount too early.

To enhance training or to incorporate realism in a rehearsal, use MILES MITTs kits on bunkers. This provides feedback if a tank engages and hits a bunker and signals the occupants that they have been hit. It is paramount that forces training in or deploying to Korea understand that the northern part of South Korea is heavily fortified. The same can be assumed of North Korea. Tankers will encounter bunkers and trench lines that have been reinforced for several decades with vegetation and concrete.

**Observation 6.** “Move to Shoot and Shoot to Move.”

Tankers are pretty good at conducting berm drills during gunnery, but during maneuver training tanks often remain still when they pull into a position. There is a disconnect between our gunnery and maneuver skills. A question we must ask ourselves is, “Are we really training the way we will fight?” Again, each theater is different with specific training requirements, so why

don't we develop gunnery tables tailored to the theaters we will be training or fighting in? In Korea, most armor units are on their fourth iteration of the new TTVIII. Though the new table is fun and challenging, it does not necessarily represent the North Korean forces that we will face. The troop targets that the tank tables currently provide often have the troops positioned in the middle and in the open. We need more troop targets with their location high and on our flanks, where they would really be in a Korean scenario. This will enhance our maneuver training that focuses on those same types of engagements. Additionally, Tank Table XII must emphasize troop targets along with “hour-glass” shaped engagement areas. A Tank Table XII with these characteristics trains our forces for the most likely fight. We have the technology and terrain to create a theater-based gunnery — we simply need the tables to provide a qualification standard.

At Warsteed, platoons and companies initially fought the way we have trained at gunnery. As the crews scanned in the middle and open ground, the OPFOR crawled along the high ground, in bunkers, along trench lines, and on the flanks, and then we learned some lessons. All of our training should focus on how we fight. If we want crews to scan 360 degrees, looking high and to their flanks, then we need to develop tank tables that emphasize this.

Another issue to consider is the proper ammunition for the engagement. When tankers see troops — whether they are in bunkers, trenches, or in the open — tanks will typically open up with coax or .50 cal. The crew soon learns that they wasted a bunch of ammo. In the Korean environment, the first and last thing enemy troops should hear is the main gun, sending an HE-OR round in their direction. What few survivors are left will most likely run for a new position. At this point, the tankers need to open with machine guns and eliminate the remaining enemy. Imagine this scenario on the move. From open protected moving 10 km or faster — it will be increasingly

difficult to engage with accuracy. Most engagements in Korea, both offensive and defensive, occur within 1 km areas. This is why we need to bring back the canister round. The canister round can provide the necessary lethality and range that is necessary in the Korean theater. Our tank tables can and should be designed to train the platoons to engage in this environment.

Finally, tank and Bradley commanders have a tendency, when engaging targets, to move away from the target after it backs down. If it's not dead, stay on it. We refer to this as "Target Designation." Don't move your sights because that same vehicle probably knows where you are and after you stopped suppressing it, it will come up again and shoot you.

**Observation 7.** "I need a medic!"

We have the best medics in the world, but it won't matter if you die before they get there. Buddy aid is crucial. If you cut an artery, you have about one minute before you bleed to death, and you can live about three minutes without oxygen. No medic in the world can move into a firefight, get on a tank, and save a life in that amount of time unless good buddy aid has been applied to the soldier. Two bad habits often observed were: first, when a tank or vehicle is killed, the crews pop out and conduct buddy aid on top of a turret that is still under fire or would have been on fire. If the tank is a kill and you are still alive, evacuate and give buddy aid under cover. Second, if the tank remains under fire, but is not going to burn or explode, buddy aid should be conducted inside the turret until contact has moved away. Turret buddy aid begs the question "Where is your first aid kit and Combat Life Saver (CLS) bag? How many combat lifesavers do you have, and at what position is he located? If he is the driver, he may not be able to help. Also, ISG and medics are anxious to move in and do their job, but remember that PCs and HMMWVs are easy targets. They must not be called forward until it is safe.

**Observation 8.** "No Such Thing As a TAA."

All assembly areas should be tactical. During planning, specific timelines for guards, maintenance, chow, and verification of boresight should be published.

In Korea, we have a real-world threat during training known as the "slickey boys." A slickey boy is a local national that operates alone or in teams. He will monitor you closely, and once your routine is established, he will strike. Slickey boys will wear BDUs with LBE, Kevlar, and often have NVGs. If guards don't physically confront other soldiers in the perimeter at night, slickey boys will go unnoticed. I have personally experienced a situation where a team of slickey boys rolled up the wire of trip flares and breached concertina wire despite roving guards with NVGs. If a slickey boy can do it, a North Korean definitely can. When on security, tanks need to be off as much as possible. LP/OPs need to be emplaced far enough away from the vehicles that tank noise will not hinder the ability to hear infiltrators. A crewman with his CVC helmet on, either scanning in TIS or with PVS-7s, is not good enough. It is too easy to sneak up on tankers as they look forward and listen to radio traffic.

**Observation 9.** "Where Are My Engineers?"

Blade assets are invaluable, and every minute counts and needs to be used. All TCs need to know the standard on a proper fighting position and the leadership must understand the approximate time it takes to construct the desired position. See *FM 5-103* for timelines. With two pickets mounted on the back of a tank, it is possible to carry 4-6 rolls of concertina wire and 10 additional engineer pickets. Using your wire in creek beds and on trails reinforced with natural obstacles such as large rocks (moved by engineers or your M88) can become a very effective complex obstacle. With very little effort, a platoon engagement area can be reinforced quickly. Incorporate your engineers in the defense. Engineers can help with hasty protective obstacles and hide in positions to throw satchel charges. With a light infantry enemy threat, anything that has a weapon must be in the fight, to include your M88 and PCs.

**Observation 10.** "Say Again, Over."

Reports are critical in our line of business. Knowing your TACSOP and exactly how your boss wants to hear information will ease the stress during battles.

Along with knowing what your "higher" wants, leaders at all levels need tactical patience during development and execution during a given situation. Platoon leaders and CO/TM leaders need to be able to analyze and paint a picture, not just dump data. A catchall phrase is, "Know yourself, the enemy and the terrain — then report it." Listen to your platoon leaders during simulation and lane training. Are they reciting the mission you gave them? Do they understand doctrinal terms, like the difference between support by fire and attack by fire? Is there enough traffic on the nets during your simulation training to accurately represent what will happen during mounted training or war?

The typical report a company commander receives is, "Contact north, out," which does no good. Platoon leaders need to give a better location, whether it is a terrain feature or a graphic control measure. Most of the time, junior leaders only report contact under direct fire. Remember, there are six other forms of contact (visual, indirect, obstacle, aircraft, chemical, and electronic) that Co/Bn commanders need to know.

When training in simulation, request the staff's support. This will help develop junior staff leaders' abilities to track and develop a battle and replicates the enormous amount of traffic that leaders must decipher during a battle.

**Observation 11.** "Slice Guys."

As mentioned before, mechanical smoke was attached to CO/TMs during our maneuver. It is an outstanding resource. However, as quickly as it can help you, the wind can change and you may find yourself silhouetted. If placed correctly, you can screen your movement, create windows to fire, or obscure your withdrawal. Mechanical smoke can be very thick as well. Crews need to go back to *FM 17-15* and rehearse techniques for navigation in those conditions. Additionally, company XOs need to know the requirements of all slices. Each unit, whether it is smoke, engineer, or infantry, will have specific needs regarding PLL and POL.

Continued on Page 40



# OPFOR Brigade Reconnaissance Company Techniques ...and How to Defeat Them

by Captain Richard S. Roubal

*The commander of the mechanized team sat in disgust as he watched the observer/controller (O/C) re-key eight of the 13 vehicles he had brought onto the counterrecon screen only 30 hours before. To make matters worse, the task force commander was fuming about the OPFOR reconnaissance elements operating in his rear areas. In the last six hours, the task force tactical operations center (TOC) had been hit with indirect fires and forced to relocate, one of his tactical obstacles had been breached, and one company's hide position had been compromised, resulting in the loss of three M2 Bradleys. This carnage was caused by the OPFOR brigade reconnaissance company (formerly the regimental reconnaissance company). As the team commander began moving his freshly resurrected command to the rear, he could only hope that the rest of the day's battle would be an improvement over the last 30 hours.*

A closer look at the OPFOR brigade reconnaissance company's task organization; mission; and tactics, techniques, and procedures may reveal how this situation came about.

The OPFOR brigade reconnaissance company at the CMTC is task-organized in accordance with *FM 100-60*, page 2-37, minus the motorcycle platoon. The standard brigade recon package, which precedes a brigade attack, consists of four BMP-2s, four BRDM-2s, and three to five dismounted reconnaissance teams. Depending on the mission, the company may have air defense or engineer elements. Not present are the BRM series of vehicles with the Tall Mike Radar (GSR) or any member of the RKH family of vehicle (chemical reconnaissance).

The mission of the brigade reconnaissance company is to conduct a zone reconnaissance within the boundaries of the parent brigade out to a range of 50 kilometers, but usually around 35 kilometers. In addition to this mission, the company may have other tasks assigned, like breaching obstacles, route reconnaissance, locating command and control cells, and overwatching named

areas of interest (NAIs), tasks the brigade reconnaissance company must perform on a regular basis.

The brigade reconnaissance company will cross the line of departure (LD) with full knowledge of all intelligence gathered by the division's reconnaissance battalion. Armed with this knowledge, the brigade reconnaissance company commander can determine probable lines of contact and probable dismount points for the dismounted reconnaissance teams.

The brigade reconnaissance company operates in three phases — penetration of the enemy counterreconnaissance screen, operations in the enemy main defensive area (MDA), and operations beyond the enemy MDA.

A closer look at each of these phases will reveal how the OPFOR reconnaissance operates throughout the depth of a defending task force's sector.

## **Penetration of the Enemy Counterreconnaissance Screen**

These operations are usually conducted during hours of limited visibility. The BRDMs lead, each with a single, two-man, dismounted reconnaissance team. Once on the ground, the dismounted teams move forward to identify any vehicular threat on the enemy counterreconnaissance screen. Unless light discipline is poor, detection is initially done by listening for any vehicles that are running in order to charge their batteries, or waiting to start. Once located by sound, the dismounted team will move in and determine the exact location. If the vehicle is within artillery range, the dismounted team then moves out of the area and calls for and adjusts indirect fires from the team's BRDM. The intent is to either destroy the defending vehicle, or, at a minimum, drive it off, creating a hole in the enemy screen line through



PHOTO: SGT MARK W. ERWIN

which the BRDM can safely pass. If the target is not within artillery range, or the tubes are not available, the dismounted team searches for a bypass. Once a hole is successfully created, or a bypass is found, the BRDM moves quickly through it and reports to the company commander that he has successfully passed through the enemy screen and that the follow-on BMP can do so as well. The BRDM will now continue to push deeper in zone, attempting to identify any obstacles and find bypass routes around them.

With the BRDM successfully past the defending enemy, the dismounted team remains in place to once again trigger fires if the defender attempts to reoccupy his position after being driven off by artillery. If the enemy does not return, the BMP will move through the hole created by the dismounted team and begin its movement through the zone. If the defending vehicle returns and the BMP can destroy it with direct fire without becoming decisively engaged, it may do so. This will allow reconnaissance elements that are unsuccessfully attempting to penetrate the screen line at other locations to pass through a known weak point. If success is achieved across the entire brigade frontage, this will not be necessary; however, the OPFOR will be extremely adept at exploiting an identified weak point.

Once the BMP has moved through the hole created by the dismounted team, the dismounts will move forward and establish surveillance on remaining elements in the enemy screen line. They will attempt to identify whether they will pull back and fight from the

MDA or stay in position and fight forward. The dismounted teams may also reconnoiter any obstacles identified by the BRDM or BMP, or they may be used to overwatch key choke points along the brigade's route of march, attempting to identify enemy FASCAM emplacement.

One of the easiest ways for the brigade reconnaissance company to get into the enemy main defensive area (MDA) is to find the withdrawal route of the enemy element which is screening forward of the MDA. Finding this obstacle-free route is a high priority for the OPFOR.

### Operations in the Enemy's Main Defensive Area

Among the key priority intelligence requirements that the brigade reconnaissance company can provide are the location of enemy BPs, and, if possible, grid coordinates to individual vehicular fighting positions. Sounds also help to gather this information, like the noise of machines digging survivability positions. This activity can be heard over long distances. The BRDMs in the lead will identify these targets and may either conduct further reconnaissance or pass them off to the following BMPs while they push deeper into the zone. The BMPs may conduct the reconnaissance mounted, or, if there are still dismounted teams onboard, dismounted. Once the BMP has determined a firm grid, it will immediately relay this information to the chief of rocket troops and artillery (CORTA) for incorporation into the brigade pre-assault fires.

If still within range, expect fires to be placed on the engineer assets preparing vehicular positions immediately, to keep the enemy from improving his battle positions.

The enemy Volcano vehicles are the single, highest-payoff targets to be found within the MDA. If a BRDM locates a Volcano vehicle, it will generate an immediate fire mission; if out of range of artillery, the BRDM will hand the target off to the following BMP. When the BMP locates the Volcano vehicle, it will engage immediately, provided it can egress safely.

The OPFOR reconnaissance commander may choose to use some of the BMPs on the enemy approaches to the MDA to identify when the defending task force conducts final occupation of the MDA from its near-hide positions. This can be of importance in two ways. First, if the reconnaissance commander

knows that the brigade is closing quickly on the enemy engagement area, and the enemy still has not occupied his battle positions, the BMPs can disrupt the enemy in his attempt to occupy. This may be successful in delaying the enemy occupation long enough to allow the brigade to secure a foothold in the enemy engagement area and destroy the enemy as he attempts to occupy his prepared positions.

Secondly, if the reconnaissance commander can identify when the enemy occupies his BPs, he can then pass this information to the CORTA and this will trigger the beginning of pre-assault fires on the known positions identified earlier, as well as positions templated by the intelligence officer.

If it is the brigade commander's intent, the BMPs may stay within the vicinity of the enemy engagement area and report all enemy actions. If the BMPs are carrying dismounted reconnaissance teams, they may drop them near the enemy engagement area to further increase coverage. Simultaneously, the BRDMs will continue providing coverage through the depth of the brigade's zone and begin reconnaissance of the subsequent objective, while attempting to identify any counterattack forces postured against the brigade.

### Operations Beyond The Enemy MDA

Operations beyond the enemy MDA will typically see the BRDMs once again operating forward. Priority targets in enemy rear areas include command and control nodes, logistics centers, company team hide positions, location of enemy reserves, and, if forward staged, any aviation assets. The location of any of these elements will once again generate a priority fire mission, if within range.

If fires are unavailable, the BRDMs will engage with direct fire only if they have the capability of destroying the target; i.e., aircraft, TOCs, or POL facilities, and can disengage quickly without sustaining any damage to their vehicle or personnel. One target that will be engaged upon identification is a Volcano-equipped aircraft. Next to the enemy TOC, this is the BRDM's highest priority target in the enemy rear area. When the BRDMs have completed their initial reconnaissance of the enemy rear area, they will move on to subsequent objectives while a more thorough reconnaissance is conducted by the BMPs.

If the brigade commander's intent is to have the BMPs move into the enemy rear, or the lead battalions combat reconnaissance patrols (CRPs) are quickly closing on the MDA, the BMPs overwatching the engagement area will move into the enemy rear as well. The BMPs will refine the reconnaissance already conducted by the preceding BRDMs.

Of critical importance to the BMPs' mission in the enemy rear is to pinpoint the location of enemy hide positions and overwatch them to alert the brigade commander of the enemy's movement toward the MDA.

Another crucial mission is to identify any enemy reserves conducting counterattacks against the brigade. If the reserve has been located, the BMPs will generally conduct surveillance and notify the intelligence officer of the reserve's impending deployment. If reconnaissance fails to locate the enemy reserve, the BMPs will overwatch key road networks and intersections upon likely counterattack routes along the brigade's route of march.

### Summary:

- The mission of the OPFOR brigade reconnaissance company is to conduct a zone reconnaissance within the brigade's zone out to 50 km (usually about 35 km).

- Brigade reconnaissance elements will have full knowledge of the enemy situation as determined by the division's reconnaissance battalion.

- The BRDMs will generally lead the BMPs into zone and will use dismounted reconnaissance teams and artillery to create a hole in the enemy screen line.

- Once through the enemy screen, BRDMs will conduct initial reconnaissance of the enemy MDA and BMPs will then refine that reconnaissance. The BMPs may stay within the MDA until the brigade begins to close on it.

- As in the MDA, the BRDMs will conduct initial reconnaissance of the enemy rear areas, attempting to locate high priority targets. The BMPs will refine reconnaissance of rear areas and attempt to locate any counterattacks moving against the brigade.

### Defeating OPFOR Reconnaissance

**Be aggressive.** *The battle is decided during the counterrecon fight!* Consider doubling the size of the counterrecon screen and adding depth to it. That

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which you destroy tonight can't hurt you tomorrow. Remember, *the OPFOR lives and dies by reconnaissance.*

**Always think security.** *Never leave an obstacle-free route for the counter-recon screen to withdraw through!* Consider a tactical obstacle that can be easily opened, closed, reinforced, and overwatched. The easiest way for the OPFOR to get in is the counterrecon element's way out.

**Keep it simple.** *Use the hunter-killer technique and stress initiative at the lowest level!* Emplace dismounted OPs forward and have them tied to a specific M1/M2 section. When OPFOR vehicles are detected, the OP *immediately* calls the section forward and talks them into position to destroy the threat. All the platoon leader/company commander has to do is ensure no fratricide potential exists. Remember, you are the *hunter*, not the *hunted*.

**Be flexible:** *Plug holes quickly!* You are going to lose vehicles. Expect it, and have a plan to cover their areas of responsibility. A platoon from another company with a "Be prepared to" mission, a few Javelin gunners with truck transport, etc... If the OPFOR recon creates a hole in your screen, the dam is about to burst.

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## WARSTEED, Continued from Page 37

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**Observation: 12.** "Crawl, Walk, Run."

Whether you are going to a CTC or Twin Bridges, you need to develop a rigorous OPD cycle and quarterly training package. Topics for OPDs should range from the basic doctrinal knowledge tests, OPORDs, and TEWTS to historical battles similar to the exercise. Platoon leaders, don't assume all of your TCs are freshly battle-tested warriors. Many of our staff sergeants are coming from recruiting, AC/RC, or staff positions. Our skills are perishable, so take a close look at your strengths and weaknesses and provide NCOs that have been away an opportunity to re-hone their skills. Quarterly training packages, such as CASEVAC, breaching (mechanical and manual), and quartering party procedures need implementation. A question to ask yourself is, "When was the last time my quartering party operated the M8 alarm or the AN/PSS-11 mine detector?" Sergeants' Time should include dismounting a loader to look around terrain features, like spurs, mounting and dismounting rollers and plows, occupying and fighting from a BP, the use of mine detectors, NBC tasks, etc.

### Summary

The Korean theater is a challenging training environment. Many of my observations are easy to train in SIMNET, CCTT, and Janus; however, we can't sacrifice our "dirt" time for simulations. Simulations can better prepare us for maneuver, but will never be able to replace it. Leaders may have to adapt doctrine or use "out-of-the-box" techniques to be successful in new and challenging areas of operations. These techniques must be incorporated in the unit TACSOP. The current 2-72 AR TACSOP was created in 1995 and continues to be a living document. Many of the techniques listed in the observations just discussed are addressed in our TACSOP, and the chain of command continually reinforces the use of the TACSOP in all our training. If we don't train our soldiers and NCOs to know and understand unit TACSOPs, then we

might as well throw them away. Along with TACSOP use, reinforce that doctrine is a guide. Each theater will lend itself to "out-of-the-box" techniques that may include burning the area prior to your entrance and firing MICLICs over and into trench lines to eradicate infantry forces.

Regardless of your post, with a strong long-range training plan, creation of a working TACSOP, conduct of rehearsals along with proper application of doctrine, armor forces will be ready to fight, whether it be in the Chorwon Valley, along the Suncheon Road, or in the deserts of the Middle East.

### Recommended Reading:

*Enter the Dragon: China's Undeclared War Against the U.S. in Korea, 1950-51* by Russell Spurr

*This Kind of War* by T.R. Fehrenbach

*Armour of the Korean War 1950-53* by Simon Dunstan

*Military History Magazine*, "Eighth Army Ordeal in Korea," by Ansil Walker, Dec. 1998

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Special thanks to LTC Wayne M. Brainerd, commander, 2-72 AR, for his review and mentorship while writing this article.

# The Tank Accuracy Error Budget and Screening Policy

by Sergeant First Class David Cooley

*SSG Highspeed is a tank company master gunner fresh out of school. We join him at the NTC, where he is preparing to screen his company's tanks at the Coyote Canyon range. It is a beautiful day, with a fresh 25 mph wind out of the north. The first tank hits almost dead center with SABOT. They load HEAT — and the round strikes to the left, outside the octagon. He checks the CCF — it's good. The boresight must be good, or they wouldn't have hit with SABOT. He thinks, maybe the gunner jerked, or it was a bad round. He has them load another HEAT and fire — the second round misses to the left as well. The stress level is rising. What does he do?*

A disturbing trend has been evolving over the last few years concerning the Live Fire Accuracy Screening Test (LFAST). In a nutshell, units are circumventing the screening doctrine and putting their own policies in effect. These policy changes are often driven by a desire to save ammunition and, though they may seem to make sense, are actually counterproductive.

First, a quick review of the doctrine. We do not individually zero our tanks. Instead, a common, or fleet, zero has been established for each type of main gun ammunition. Each tank must go through the LFAST process prior to live-fire gunnery training. The purpose of the LFAST is to ensure that the tank can fire accurately using the fleet zero method of calibration. In order to pass the LFAST, the tank must hit, with one of the first two rounds fired of each type, fully within a 175 cm octagon, (soon to be changed to a circle), and placed at 1500 meters +/- 20m. A tank that successfully does so is said to be "screened." Tanks that do not hit within

the octagon are checked for mechanical faults and crew errors, and if none are found, are given their own individual zero data. This is known as a discrete CCF (Computer Correction Factor). The process for determining a discrete CCF is to fire a three-round shot group, determine the Mean Point of Impact (MPI), and adjust the reticle to the MPI. A single confirmation round is then fired to ensure the tank will hit.

Every master gunner knows all of this already. Nevertheless, some are not carrying it out, either on their own initiative or in compliance with orders from their commanders. Often, this is done in order to save ammunition. The most common alteration is to give discrete CCFs after the *first* round fired fails to hit within the octagon. The rationale is that *DA PAM 350-38* only authorizes two rounds of each type for screening purposes. To do a discrete CCF by the book requires four.

To simply say that we must follow doctrine because it *is* doctrine is not good enough, especially in this case. We have to understand *why*. The process does have flaws, certainly, and we will discuss those flaws as well, but some of the changes are much worse.

Complete understanding of the screening process requires a basic familiarity with the error budget. The error budget is the influence of hardware design and manufacture, environmental conditions, and human factors on main gun accuracy and consistency. Put another way, it is all of the things which could cause a main gun round to miss its desired



point of impact. We break the error budget down into three major categories: fixed biases, variable biases, and random errors. Fixed biases are errors induced by ammunition, weapon, and fire control system (FCS) design and manufacture. They are essentially constant, and they are present all of the time. Therefore, they are easily corrected in modern fire control systems. Examples are drift and gun-sight parallax. Variable biases are errors that remain fairly constant during a single engagement, or firing occasion, but may change considerably from one occasion to the next. In other words, when you fire two HEAT rounds at an enemy APC, that is one occasion. As soon as you shift fires to another target, or change ammunition, or the range to the target changes considerably, it's a new occasion, and the effects of the variable biases may change as well. While variable biases cannot be corrected automatically by the FCS, they can often be



## Figure 1. Stationary Firer versus Stationary Target Error Sources

### FIXED BIASES:

- Projectile drift
- Gun-sight parallax
- Uncompensated Mean Jump

### VARIABLE BIASES:

#### Horizontal Variable Biases:

- Cant
- Crosswind
- Jump
- Fire Control
- Parallax, Drift Compensation (PDC)
- Rotation of the Earth
- Boresight Retention
- Calibration/Zeroing

#### Vertical Variable Biases:

- Muzzle Velocity Variation
- Angle of Site
- Range Estimation + PDC
- Jump
- Fire Control
- Range Wind
- Air Temperature
- Air Density
- Boresight Retention
- Windage Jump
- Optical Path Bending
- Vertical Cant
- Calibration/Zeroing

### RANDOM ERRORS:

- Round-to-round Dispersion
- Gunner Lay Error
- Visual Resolution

minimized by the FCS or through crew training. Examples of variable biases are boresight retention error and range estimation error. Random errors are errors whose magnitude and direction change from round to round. They are much more difficult to correct because they are so unpredictable. Examples of random errors are round-to-round dispersion and gunner lay error. (See Fig. 1 for the entire list of error sources.)

Now we must further focus on three individual error sources: mean jump, variable jump, and round-to-round dispersion. (Note: The section in Chapter 7 of *FM 17-12-1-1* does not reflect the following definitions; the new *17-12-1-1* will.)

Mean jump is the average difference between the actual impact of a group of rounds fired over many occasions and the intended strike of those rounds, given that all inputs to the FCS are cor-

rect or within tolerance. When we first test a new main gun round, we perform fixed gun-mount firings to determine the ballistic properties of the projectile — the data that you can find in the firing tables. This data is “hard-wired” into the computer, and is accessed by entering the ammunition subdes. The next step is to fire the round from a tank — many, many rounds. The fact that we are firing from a tank, and not a fixed gun, will in itself cause some error. This error is part of mean jump, and there are many other factors as well. As we perform these tank firings, a pattern will begin to develop, and the MPI of those rounds will be determined. For example, the MPI for training HEAT, M831, was right .15 mils and down .35 mils from the aimpoint, hence the CCF published in *FM 17-12-1-1*, which compensates for mean jump. Occasionally a tank will not hit with this CCF — the mean jump for that particular tank is different to a degree that the fleet CCF will not correct for it. A discrete CCF is given, which compensates for mean jump for that particular tank. The key is, CCFs compensate for mean jump *only*. Any CCF given to compensate for any other variable or random error source *will not work*. And, mean jump can never be identified on the basis of one round; even *three* isn't really enough.

Next, let's discuss variable jump. Variable jump is the average difference between actual impacts for a **particular occasion** and the intended strike of those rounds, given that all inputs to the FCS are correct or within tolerance. This means that, after all preparation is complete (CCFs properly entered), and all the variable biases are eliminated or otherwise compensated for (good boresight, correct range determined, cant sensor working, etc.), there are still variable error sources not otherwise accounted for, or not perfectly corrected. All these sources together make up variable jump. An example is if there is a headwind or tailwind. The crosswind sensor on the M1-series tanks only reads crosswind. Therefore, a headwind or tailwind will cause the round to strike lower, or higher, respectively,

because the system does not correct for these influences. That error is part of variable jump. To give a discrete CCF to compensate for variable jump, or any other of the variable biases, will be ineffective. This is because once the error source changes, or is eliminated, the correction you made is now *inducing* error. And the variable biases, by definition, will *always* change.

Lastly, let's look at round-to-round dispersion. This is the plain fact that, all conditions being perfect, every round will not hit the same point on a target. Instead, there will be a spread of hits around a central point, and the area into which the rounds fall is known as the dispersion zone. As range to the target increases, so does the dispersion zone. In the tank accuracy error budget, round-to-round dispersion is the second largest error. (Jump error is the largest by far, while boresight retention and gunner lay error are both slightly smaller than round-to-round dispersion.) Consequently, it is quite a gamble to estimate a tank's true MPI based on one round fired. In fact, this gamble applies to the confirmation round as well! (More on that later.)

All of this explains why a discrete CCF should never be given on the basis of one round. The CCF, as a correction that is always present, can only correct for errors that are always present. If given under conditions that are going to change, it becomes an error source itself. Let's look at a specific example. On the following page are plots of a 10-round sample fired from a lot with a dispersion of 0.25 mils x 0.25 mils. Figure 2 shows the 10-round sample impacts on an ST4 at 1500 meters. This 10-round sample came out quite well. The center of the group is good in azimuth, but is a little low (MPI=0 mils x -0.1 mils). The dispersion of the 10-round sample is 0.23 mils x 0.25 mils, which is pretty close to the dispersion of the lot itself. (Note: it's very possible that a 10-round sample group from a 0.25 x 0.25 mil lot could be as tight as 0.20 x 0.20 or as loose as 0.30 x 0.30).

Figure 3 shows what might happen if a crew decides to do a one-round zero using the first round fired. Since round 1 was right and slightly high, rounds fired after the referral will likely be left and a little low. In this particular case, without a one-round zero, rounds 6, 3, 2, 10, and 9 are clearly hits. After a one-round zero, those rounds are close



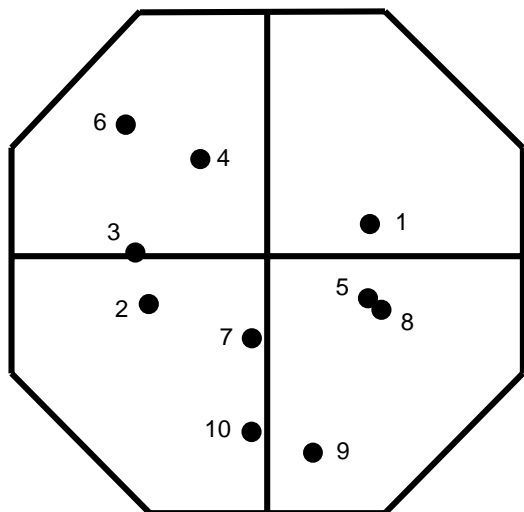


Figure 2. 10-Round Group Simulated Impacts on ST4, 1500 meters.

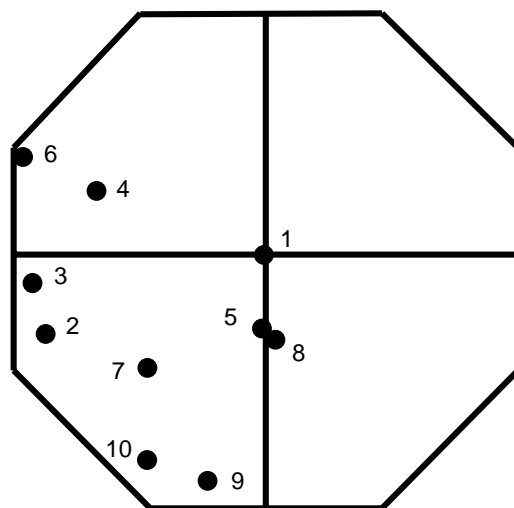


Figure 3. 10-Round Group Simulated Impacts on ST4. Group referred based on Round #1.

to edge of the panel. With luck, one-round zeroes can work — sometimes, but much of the time a one-round zero will hurt accuracy.

Having said that, the policies currently in effect are not perfect by any means. Even three rounds, fired over a short period of time, are not always enough to eliminate all the variable and random error sources. Ideally, you would want to fire a number of rounds over a longer period of time, to see if you observed the same results. Or, you could fire at different targets, at different ranges, thereby getting data for more than one firing occasion (sound familiar?) Also, more than one confirmation round is needed. Honestly, saying that a tank is *good* based on one round violates our stated rule of not making one-round judgments as well. (Look in the tank operator's manual and you'll see suggested zeroing procedures that include a 5-round initial group, sight referral, then a 3-round confirmation group.)

The natural question for a tank crew to ask is, "Why don't we just zero all the tanks and be done with it?" The first response to that is, we intend to do all we can to make sure tanks hit in combat, and our assumption is that the first round fired may actually be at an enemy vehicle. We cannot assume that tanks will have the luxury of time or the political support to fire DU rounds prior to actual combat. Using a fleet zero for combat rounds is the only feasible means of handling this situation, and if we use fleet zero for combat rounds, we should use fleet zero for

training rounds. The other answer to that is, the rules that apply to a discrete CCF apply to any zeroing procedure. For that matter, determining a discrete CCF *is* zeroing. No matter what is wrong with a tank, or its crew, we can zero it and get it to hit — for a while. As soon as the conditions under which you zeroed change, the zero starts to add error. If we zeroed to overcome a bad boresight, as soon as the crew boresights properly, the tank will start to miss. But screening would be more effective if we allotted more ammunition to it — say, firing four rounds and hitting the octagon with three. This would also increase crew confidence in their tank. Additionally, using a larger shot group to determine a discrete CCF would be more accurate, and two confirmation rounds would be better than one.

Of course, our challenge is to make our current policy work. The key to this, as in many things, is preparation. Specifically, Phase I of Crew Skills Training must be conducted to standard, as outlined in *FM 17-12-1-2*. This consists of classroom training on the FCS, switchology training, prep-to-fire checks, boresighting weekly, and AACs monthly. A unit that does this training to standard, and has a good turret maintenance program in effect, will screen the vast majority of their tanks with one round of each type, thus saving rounds for the very few that need a discrete CCF. The main cause for the MIA1 to miss targets is crew error, pure and simple. Eliminate that, and your results will show it.

Getting back to the opening situation, the master gunner has to identify why his tanks are failing to hit the octagon. He has to look at the whole situation, use his knowledge of the error budget, the tank, ammunition, his crews, and *find the problem*. What he should *not* do is start handing out discrete CCFs, except as the very last resort. The missing piece of information is that, at the Coyote Canyon range, the firing tanks sit in a hole, with a large berm to the left and right. The berm to the north of each tank is preventing the wind sensor from accurately determining the wind's effect on the rounds fired, causing HEAT rounds to strike left. Luckily, after several tanks experience the same problem, SSG Highspeed has a flash of inspiration. He brings one of the tanks which failed to screen out of its hole and fires a HEAT round, which splits the bull. The tank company goes up to the live-fire and is rewarded by seeing the third MRB come down the *other* side of the valley. Where do you think they would have attacked if he had given discrete CCFs for all of his tanks?

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# Maintenance Under Fire

by Captain J.M. Pierre

*“Black 6, this is Blue 1...Slant 3. A32 is a mobility kill vicinity November-Kilo 449121...Break...Black 7, request vehicle evacuation.”*

*“Roger, Wrench is en route.”*

When the mechanics went to recover the “disabled” tank, they thought their mission was routine: get to the vehicle, simulate the hook-up, and tow A32 to the maintenance collection point. It was a typical operation, conducted several times in this and other training events. There was no big hubbub made as the M88 lumbered across the rolling terrain. Then the opposing force (OPFOR) appeared — a three-man ambush. The mechanics’ eyes widened. They halted in the center of the “enemy” kill zone. It was an indecisive moment for the team mechanics fumbling with their .50 caliber machine gun. Thirty seconds later, in response to a constant stream of “enemy” fire, the company/team’s mechanics fired back. Their return fire was late; it was intermittent at best. The OPFOR had the upper hand and they held their ground. Then they were gone.

At the vehicle recovery site, thinking the threat had vanished, the mechanics casually walked to A32. Black 7 had evacuated the crewmen. The area looked safe:

“Okay, let’s get this thing out of here,” the shop foreman said right before he walked into a booby trap. Remember that OPFOR ambush team? They returned with more ammunition. Fully uploaded, they wanted to fight again. This was not a “typical” vehicle recovery — you know, the kind of staged event where Combat Service Support (CSS) assets have an uncontested reign over the conquered battlefield. This mission had a live, thinking opposing force that was dedicated to disrupting their efforts. It forced them to fight as hard as the company/team they supported, and therein it demonstrated a weakness of the maintenance team: self-defense. The mechanics became proficient in the technical tasks of vehicle retrieval, their everyday job — recovery, equipment repair, and main-



An M88 crewman engages targets during live fire, overseen by a safety monitor.

tenance estimates. But they were unable to execute the tactical tasks necessary for self-defense.

The battle ends leaving one side the victor, the other wondering what went wrong, and both sides licking their wounds as they reconstitute for the next engagement. It is in this quiet moment that the dedicated maintenance team shines. The heavy force, bound as we are to our tanks and Bradleys, are likewise tethered to those maintenance fellows who feverishly regenerate our vehicular combat power. It is in this lull that the mechanics must ostensibly become riflemen, retrieving disabled vehicles from the field.

On the face of it, training mechanics as riflemen seems like a low priority collective training event. It appears to take resources away from infantrymen, tankers, and scouts while distracting mechanics from their priorities: repair and recovery. However, when one M88 and its contingent of 63Ts are committed to the recovery of 14 combat systems and three M88s exist in the maneuver battalion, the OPFOR’s disruption of recovery efforts directly impacts the ability of the company/team and the battalion task force to regenerate combat power for future operations. The solution is to train long-forgotten soldier skills and to focus training on self-defense on the battlefield.

During the 1998-1999 training year, Headquarters Company, 2nd Battalion, 9th Infantry (Mechanized) trained vehi-

cle evacuation as an isolated lane designed to support its battalion and company essential task: “Sustain.” By Battlefield Operating Systems, HHC, 2-9 IN (M) focused its training program as shown in Figure 1.

Maintenance Live Fire was conducted in four phases and per *FM 20-22*, *ARTEP 7-94 MTP*, and *ARTEP 17-236-10 MTP*. The greatest emphasis went to those tasks involving tactical movement and establishing a hasty defense at the recovery site. The second priority was a safe recovery of the vehicle per *FM 20-22*. Finally, the training program stressed moving tactically and recovering safely under several adverse conditions replicating the “fog of war,” including NBC, EPWs, booby traps, and the ever-present opposing force.

Phase I was the orientation and rehearsal (rock drill and dry run) portion of the training. Phase II (blank fire) introduced soldiers to moving and shooting as part of their recovery. Phase III (NBC fire and validation) reinforced the training of the previous iterations under more intense conditions. Success in this phase validated the maintenance teams to proceed to Phase IV (maintenance live fire), the most exciting and dangerous portion of the training. After the soldiers became familiar with the process of reacting to an enemy, live fire developed confidence in their ability to kill the enemy. Soldiers learned to ask three questions:

- 1) Am I prepared to defend myself?
- 2) Is the area and vehicle secured?
- 3) Have I properly estimated the rig and load?

### SCENARIO

The lane begins in the midst of a company/team offensive mission (See scenario diagram on Page 47). The maintenance team monitors the company/team net in an "attack position." Under simulated combat conditions, a tracked vehicle is immobilized by hostile fire. On order, the maintenance team conducts a tactical movement to the recovery site, establishes security, conducts a battle damage estimate, calculates the resistance needed to move the load, and returns the disabled vehicle to the maintenance collection point without further damage to the vehicle or injury to soldiers ("Tow disabled track vehicle," Task Number 17-4-1292, *ARTEP 17-236-10 MTP*).

### PLANNING

Maintenance live fire was programmed as part of the 2-9 IN (M) yearly gunnery training. HHC coordinated for the Warrior Valley range, the ammunition requirements, and rotated its maintenance teams with the recovery section to replace the loss to the companies. The HHC commander was the primary trainer and maneuver evaluator. The battalion maintenance technician (BMT) was the technical trainer and recovery evaluator. Soldiers were tasked to serve as the range OIC, NCOIC, ammunition NCO, and range safety/controllers. Finally, medics followed as part of the recovery effort, both to provide medical coverage and to train their task of medical evacuation.

In the planning phase, HHC, 2-9 IN (M) conducted a leader's reconnaissance of the Warrior Valley Range at the Korea Training Center. The range OIC, BMT, and battalion maintenance sergeant (BMS) gained an understanding of the terrain by walking the range and talking about the actions of each soldier during the different phases of the training. They refined the scenario based on the range restrictions, safety

<b>MANEUVER TASKS</b>	
Occupy Assembly Area	7-2-1317
Perform Tactical Road March	7-2-1301
Hasty Occupation of a Battle Position	17-3-2601
Conduct Tactical Movement	17-3-1016
Execute Actions On Contact	17-3-1021
Disengage from the Enemy	17-3-2380
Defend Against Ambush/Road Not Blocked	17-3-1059
<b>FIRE SUPPORT TASKS</b>	
Employ Fire Support	7-3-1320
<b>INTELLIGENCE TASKS</b>	
Practice Communication and Electronic Security	7-3-1406
<b>MOBILITY/SURVIVABILITY TASKS</b>	
React to Chemical Attack	7-2-1318
Perform Hasty Decontamination	7-3-1301
Cross Contaminated Area	7-2-1315
Employ Camouflage	7-3-1309
Operate in NBC Environment	7-3-1318
Treat NBC-Contaminated Casualties	7-3-1602
<b>AIR DEFENSE TASKS</b>	
Defend Against Air Attack (Passive)	7-2-1312
<b>COMBAT SERVICE SUPPORT TASKS</b>	
Destroy Unit Vehicle and Equipment	7-3-1311
Perform Maintenance Operations	7-3-1316
Evacuate Casualties	7-3-1613
Provide Maintenance Operations	7-3-1703
Control Maintenance Operations	7-3-1704
Establish Unit Maintenance Collection Point	7-3-1705
Provide Class IX Support	7-3-1707
Perform Recovery of Vehicle and Equipment	7-3-1708
Perform Battle Damage Assessment and Recovery	7-3-1711
<b>COMMAND AND CONTROL TASKS</b>	
Consolidate/Reorganize	7-3-1302
Prepare For Combat	7-3-1305
Sustain	7-3-1306
Establish Communication	7-3-1307
Control Support Operations	7-3-1514
Perform Continuous Operations	7-3-1315
Recover a Mired Vehicle	17-4-1295
Select and Establish UMCP or Field Maintenance Sites	17-3-1266
Perform Battle Damage Assessment	17-3-1279
Repair Unit Equipment	17-3-1280

**Figure 1**

considerations, and troop proficiency. As surface danger zones (SDZ) of the range varied within its depth, they also ensured the range supported the ammunition used. Finally, they validated and modified the scenario with Range Control personnel. In the end, the leaders of HHC, 2-9th IN walked away with a common vision of the firing lines and the target arrays.

### PREPARATION

Soldiers started their preparation for maintenance live fire three months prior to the event. As mission support prevents the mechanics from conducting dedicated everyday training, NCOs took advantage of the weekly Sergeants Time to train those individual tasks that supported the collective tasks above:

land navigation, radio procedures, driver training and boom operation, and weapons qualification. A current weapons qualification was also mandatory for the live fire. Unqualified mechanics would be permitted to participate in the training but could not shoot ball ammunition.

## EXECUTION

During Phase I - Dry Run soldiers were briefed on the scenario and provided the task and purpose of the training by the OIC. This was followed by a rock drill and training on individual movement techniques (IMT). The training objective was the repetition of reaction tasks as they were to be performed during the live fire.

After the practice, soldiers conducted a mounted dry run of the lane. The M88 reacted to an ambush by 'engaging' targets as the team chief reported to higher. At the recovery site, a team of four mechanics dismounted the M113 and conducted a local reconnaissance of the area. They established security along the main avenue of approach and directed the rest of the maintenance team to continue with the recovery mission. When targets appeared, they engaged from the prone position to defend the recovery effort.

During the mounted portion, target acquisition was the biggest problem. During the dismounted portion, soldiers had to relearn individual and buddy movement. They had to also learn how to establish a firing line. Soldiers tended to mask each other's fires, silhouette themselves, or establish poor firing positions. Again, repetition of IMT and reaction skills was crucial in this phase and proficiency was a criterion for moving to the blank fire training phase.

In Phase II, blank fire, the same actions were conducted with the addition of blank ammunition, artillery simulators, and trip flare booby traps. In this iteration, soldiers learned to execute their mission with the din of "battlefield noise."

During the mounted portion, the .50 caliber gunner usually had trouble firing his machine gun from the top of the M88 — a perishable skill that they rarely trained. During the dismounted

<b>COMBAT SERVICE SUPPORT TASKS</b>	
Prepare and Evacuate Casualties	7-2-1314
Evacuate KIA Remains	7-3-1509
Treat Casualties	7-3-1601
Treat/Secure/Evacuate Enemy Prisoners of War	7-3-1608
Perform Triage	7-3-1609
Develop/Supervise Medical Support	7-3-1611
Establish Medical Platoon Area of Operation	7-3-1612
Evacuate Casualties	7-3-1613

**Figure 2**

portion, the team chiefs found that they had trouble with command and control of both the security force and the recovery when the gunfire started. This was overcome by having the shop foreman direct the security section as the team chief directed the recovery effort. Now leaders were present at two crucial areas and the team chief was near the radio in order to request indirect fire.

Soldiers also discovered they had to move tactically through an inhospitable terrain in order to find cover from "enemy" fire while maintaining their fire line. Again, repetition during the dry run was essential for teaching them how to move. Trainers emphasized 3- to 5-second rushes and communication with all members of the dismounted security team as they established their firing line.

With more skills to retrain in order to safely progress to a live fire, the blank fire was conducted twice. Time constraints prevented full speed runs so, as a minimum, crucial events were rehearsed as much as possible.

The most demanding iteration was Phase III, the NBC fire and validation. The skills developed in blank fire were reinforced in MOPP IV. The ability to successfully and safely drive off-road, conduct recovery tasks, engage targets, and command and control while impaired by a protective mask and gloves validated the teams for the live fire run.

During Phase IV, safeties certified that soldiers could properly dismount their vehicles, conduct movement to the firing line, and shoot. On the M88, its safety certified that the gunner could successfully load his .50 caliber machine gun, shoot, and clear it.

Mechanics were decertified if they failed to point their weapons at the ground during IMT, failed to keep their weapons on safe, or failed to point up and down range on the firing line. An

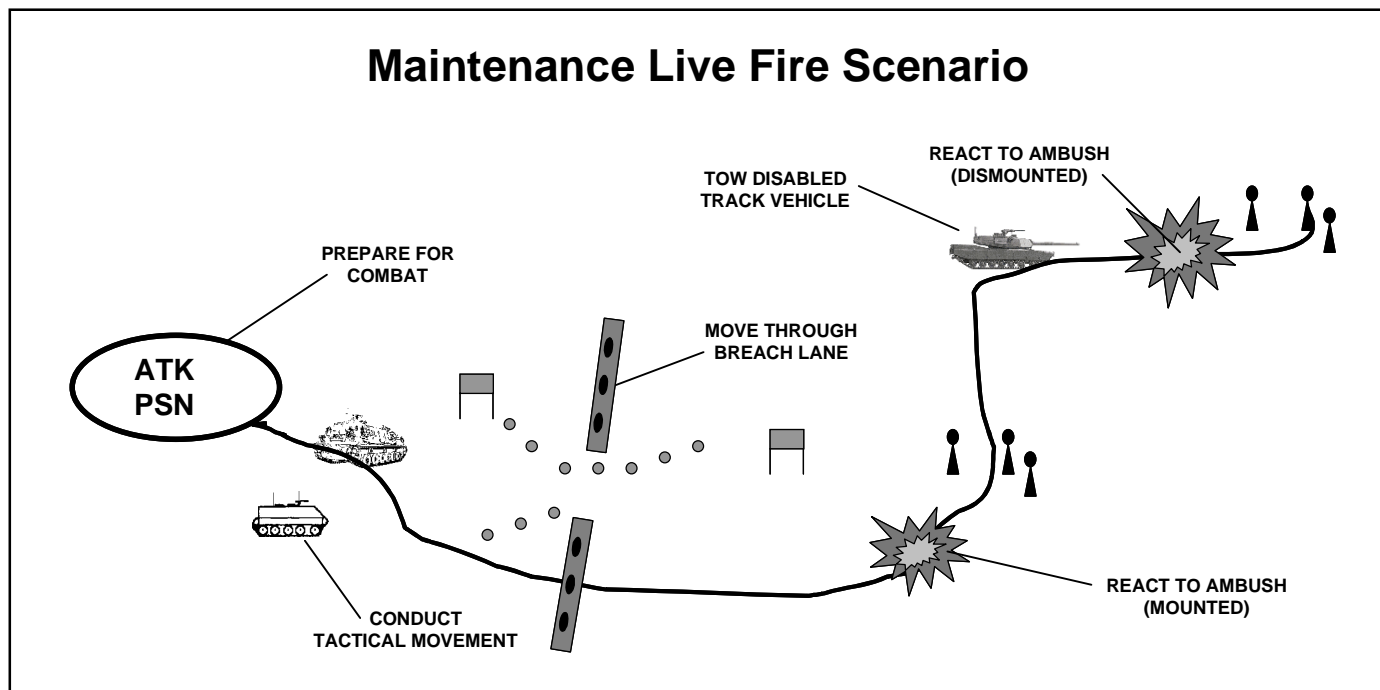
accidental discharge of a weapon was a cause of immediate decertification.

## Training Aids

Training aids enhance training when they create the "effects of the battlefield." For example:

- A breach lane was built through a wire/mine obstacle. The breach was intentionally placed off the main flow of traffic in order to train teams to identify and move through the single lane breach.
- Trip flares and whistling devices were used as booby traps — these forced soldiers to thoroughly search vehicles.
- Target lift devices with E-type silhouettes were primarily used. An operator with the remote control device walked the lane and lifted targets on command. This reduced target confusion as the maintenance teams moved through the range.
- Where lift devices could not be placed, E-type silhouettes were suspended at a 45-degree angle by cord and a balloon. Shooting the balloon caused the target to fall. This worked exceptionally well for training individual marksmanship, fire control, and fire distribution.
- Uniforms on the targets further created the effect of a real enemy presenting himself.
- Video cameras recorded every action to allow us to dissect our TTPs (tactics, techniques, and procedures) at the AAR (after-action review). Soldiers learned more quickly when they saw themselves making mistakes.
- Medical teams were the most significant addition to the maintenance lane. They conducted medical-related training that supported our essential task, SUSTAIN. We focused on the tasks listed in Figure 2.

## Maintenance Live Fire Scenario



### Conclusion

At the end of maneuver training a voice comes over the command net: “ENDEX...ENDEX...ENDEX...move to the AAR site.” The objective has just been seized. Maybe platoons have finished consolidating, but the support assets have not moved to clear the battlefield. This fails to integrate CSS into the overall training exercise. It, therefore, fails to enforce basic soldier skills, such as security, tactical movement, and marksmanship, while teaching that vehicle retrieval is administrative — never conducted under the weapon sights of the OPFOR. A simple vehicle recovery may then result in

untrained supporters involved in a direct firefight.

So, as the company/team consolidates on its objective, possibly having left some “enemy” dismount alive, are the soldiers ready to return fire? Is security around the vehicle established? Are there booby traps around the vehicle? What amount of effort is required to secure the site while retaining enough manpower for the mission?

Isolated CSS training events, such as the maintenance live fire, specifically address weaknesses in the forgotten components of the company/teams by training them to competently answer

these questions. It builds confidence in maintenance teams, and in individual soldiers, assuring them that they can accomplish their mission no matter where the OPFOR may appear.

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CPT J.M. Pierre is a 1992 graduate of the Fordham University ROTC program. He has served as a tank platoon leader and tank company XO in 1-67th AR, 2d AD. After AOAC, he commanded A/1-72d AR and HHC, 2-9th IN (M), both in the 2d ID, Camp Casey, Korea. He is currently the Cavalry Team Chief and S3 of 3d BN (TS), 307th IN.



At left, local security is set up to protect mechanics during a recovery. Above, medics train by evacuating a “casualty”.



An Abrams tank firing KE ammunition is widely regarded as the most effective anti-armor weapon in the world. The M829E3 round will provide greater armor penetration capability than its predecessors and will also improve accuracy out to greater tactical line of sight (LOS) ranges in the "Red Zone."

**120mm Canister.** We increasingly expect our Abrams tank to operate in close, complex, and urban terrain supporting assaulting infantry. As such, the M1A1/M1A2 requires a simple, quick means of engaging enemy infantry with an area weapon that provides a greater volume than the tank's machine guns or the organic weapons of friendly infantry. The intent is to quickly neutralize the enemy and shatter his morale. Used by tanks in previous wars, nothing does that better, close in, than thousands of steel balls, flechettes, and pellets launched with one pull of the trigger. Our need for an effective canister round spans the full spectrum of conflict, from small-scale contingencies to major theaters of war. Meeting the requirement will facilitate dominant maneuver and provide an offensive form of force protection. The Mechanized Force is currently unable to provide effective, rapid, lethal fire against massed assaulting infantry armed with hand-held anti-tank and automatic weapons at close range (500 meters or less). The current inability of the Abrams tank to defeat enemy infantry and close-in anti-tank systems reduces the survivability of the maneuver force and the infantry it supports. Canister will solve this problem. We hope to begin fielding the canister round in 2003-4.

#### **4. Recapitalize through rebuild (M1A1D/M2A2ODS) remaining mechanized containment and reinforcing forces (AC/RC).**

While Priorities One and Two address upgrades for our decisive counterattack force, our early entry and containment "first to fight" forces also require an adequate level of overmatch. The 1st Infantry Division, 1st Armored Division, and 2nd Infantry Division require recapitalization and digitization of current weapon systems. Additionally, the eight National Guard enhanced separate brigades and seven National Guard divisions require recapitalization as soon as practical.

Key M1A1D improvements include information dominance technologies with FBCB<sup>2</sup>, 1st GEN FLIR, FTL, BIT/FIT, GPS. Also critical is a rebuild program that brings the tank to "zero time" with limited modification and a

completely rebuilt engine. We also hope to gain approval for 2nd Gen FLIR for incorporation on the M1A1D.

The key capabilities of rebuilt systems for the Bradley ODS-D are information dominance, FBCB<sup>2</sup>, 1st GEN FLIR, FTL, GPS, Bradley tile protection enhancements, and a rebuild to zero time on the engine.

#### **5. Match Army Prepositioned Stocks (APS) with appropriate early entry containment force equipment.**

#### **6. Invest in adequate institutional, home station, and CTC training upgrades to ensure Mechanized Force readiness.**

The centerpiece of our institutional improvements is the Institutional Digital Education Program (IDEP), which will ensure leaders and staffs get the most out of the digital equipment coming online. The key components of the home station training upgrades will be a fixed tactical internet, Close Combat Tactical Trainers (CCTT's) for Company/Team Maneuver/Direct Fire Training, and Home Station Integrated Training Systems (HITS) to provide a CTC-like training experience. CTC training enhancements include a programmed upgrade and rebuild of infrastructure and equipment, an enhanced live fire capability for USAREUR, and MOUT capabilities.

#### **7. Ensure adequate obstacle reduction (Grizzly) and gap-crossing (Wolverine) capability in III Corps.**

#### **8. Develop and procure long-range indirect fire systems (Crusader) and munitions to enhance non-line-of-sight effects.**

#### **9. Acquire reconnaissance platform to provide III Corps with inter-netted ISR/target acquisition capability.**

#### **10. Invest in O&S cost reducers (common engine, built-in diagnostics reliability improvements).**

#### **11. Empower XVIII Corps with appropriate reconnaissance, surveillance and security cavalry capability.**

As discussed in last month's Commander's Hatch, we are diligently engaged in studying and recommending ways to transform the 2nd ACR into a more viable reconnaissance and security organization in the near term.

#### **12. Procure adequate battlefield recovery capability (Hercules) to outfit the III Corps counterattack force.**

We are satisfied that the MFM Plan lays out the best way ahead for our Legacy Force. These improvements will ensure the dominance of our current heavy force while we confidently apply resources to pursue the Objective Force armed with the Future Combat System.

Scheduled to initially enter the force around 2010, the FCS will be a radical departure from traditional combat vehicle design. The Defense Advanced Research Projects Agency (DARPA) and the Army have embarked on an ambitious program that will be a "system of systems" which leverages emerging technologies and has a built-in capability to incorporate future advances. Key to its success will be our ability to harness improvements in the distribution and effective use of information power. The commander of this force will achieve battlefield dominance through inter-netted sensors and shooters and the ability to quickly mass and combine fires to achieve tactical dominance.

Although much research has already been completed, we can't yet predict exactly what the FCS will look like or how it will work. We do know this much, however. It will continue to do what only ground forces can do: close with the enemy in a manner that leaves him no option but to yield or be destroyed.

One of the FCS "shooter" vehicles should be a direct-fire platform manned by soldiers trained in the best tanker and cavalry traditions. It will weigh less than 20 tons and be deployable by C-130 and tilt-rotor aircraft. It will have Line of Sight (LOS) and Beyond LOS (BLOS) lethality to defeat all Level One armor threats. Further, it will possess superior tactical and operational mobility regardless of terrain or operational area infrastructure. Even though it will weigh less than a third of the Abrams tank, the FCS will have greater survivability. How? By incorporating advanced counter detection/acquisition technologies such as electronic signature elimination and enemy target acquisition and fire control interdiction. Additionally, capabilities such as false target generation and more traditional passive, active, and reactive armor packages will enhance protection.

We can expect to see the first demonstration of applicable technologies in 2003.

The future of the mounted force is exciting and full of promise. Our important role in Army Transformation is just one more example of how the Army depends

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heavily on our branch for ideas and leadership. The opportunities for growth, personal and professional satisfaction, and warrior leadership will grow and expand in our branch. For those who choose a career as an armor warrior, the future will provide opportunities just as monumental as the days when we transformed from the horse to the mechanized platform. Nonetheless, turbulence always accompanies change. With regard to our officer leaders, we've recently seen many fine captains leave our ranks. I'd like to address this captain attrition in the branch and give you some thoughts on why we want you to stay with our unique profession.

As of the 3rd Quarter of Fiscal Year 2000, the overall attrition rate for Armor captains stands at about 12% per year. This is 2% higher than the same time last year. The added 2% means that about 23 more captains will leave the Armor Force this year than left last year. While these increased losses won't effect our ability to fulfill Armor missions, they do concern me. Opportunities for excellence in leadership and personal satisfaction are in fact growing in the branch. We hope this increased attrition is an anomaly.

Numerous departing officers cite the large amount of time spent deployed from their family as a reason for leaving. Stabilization and support missions are noted as especially unpopular. Nonetheless, engagement throughout the world is a key tenet of our National Security Strategy, so these missions simply must be conducted to standard. PERSCOM now tracks every soldier's time spent deployed from home. Once that time goes over 180 days in any 12-month period, that trooper will return home as soon as possible.

Additionally, Reserve Component units participate in stability missions in increasingly large numbers. The recent success enjoyed in Bosnia by the 49th Armored Division of the Texas National Guard is but one example. Full use of the Total Army also allows us to address another shortcoming that factored in a number of decisions to separate: lack of combat training opportunities. With a decrease in stability and support deployments, (and the train-up necessary to complete them), warfighting skills can receive increased attention.

Another distracter named by those leaving the service is long hours spent in garrison performing non-METL tasks accompanied by personnel shortages. The Chief of Staff of the Army's goal to man TOE units at 100% by the end of

the year will go a long way to rectify this situation. Further, the Army has increased manning authorizations for units in the field. While "garrison activities" will always be with us, fully manned units will have more options available to meet them.

The most troubling reason given for leaving is a perceived "zero defect" command climate and a resulting culture of micro-management. Many came into the Army to lead soldiers and willingly shouldered the immense responsibility of command. Some of those separating, however, tell us that superiors more concerned with making sure nothing goes wrong on their watch have taken this responsibility away. Most importantly, they are frustrated because they feel senior leaders are either unwilling or unable to understand and address their concerns.

What are we doing to address the full range of concerns? This past year has seen approval of the largest package of pay raises and pay incentives since 1980. The redux retirement plan was repealed and the old 50% plan restored. Additionally, OPMS XXI provides officers alternate career choices and increases their chances for promotion in non-operations fields. It also dramatically increases battalion command opportunity for those officers who remain in their basic branches. While not specifically designed to eliminate a perceived "zero-defect" culture, increased pay and better opportunities for promotion lay the groundwork for a healthier command climate.

Still, the Army will remain in a state of change until the full benefits of OPMS XXI take effect and we gain fuller clarity on the course transformation will take. We've seen challenges like this before. The inter-war years of the 1920s and '30s are a great example. We were deployed throughout the world while simultaneously transforming into a mechanized force. Many officers were uncertain about the direction of the Army and what their role would be. However, had great officers like Patton, Eisenhower, Abrams, and Bradley given up, our successes on the battlefield during the Second World War may have been fewer and farther between, with much higher casualties. Fortunately, they, and thousands like them, stayed and led the Army to victory over arguably the greatest threat our nation has ever faced.

Today, together, we can make this great Army even better. I have a challenge for you, NCOs and officers alike.

If you see something wrong, tell your commander what the problem is and see if it is something that he can fix. If it is an institutional or systemic shortcoming, work to correct it in your current position. Use one of our Army's many avenues of communication to inform senior leaders of the problem so they can address the issue. I am personally interested in your views and concerns. Write me and I will do everything I can to positively impact the situation. Even better, challenge yourself to achieve a level where you can be even more influential in solving the problem.

Finally, take a hard look at the Army and yourself. Don't be afraid to talk to your superiors. Chances are many of them faced the same dilemmas you do today. I am convinced that your senior leaders will not penalize their subordinates for expressing their convictions. In fact, we invite dialog and highly encourage professional debate. We are all committed to eliminating the notion of a zero defects climate — real or perceived. The Army will always offer unique opportunities and camaraderie that you won't find in civilian life simply due to the nature of our profession. If you have the opportunity, talk to some officers who have recently come back on active duty voluntarily. Use their perceptions to help make your decision.

Certainly, the strong economy of the last few years has its appeal. Some tankers and cavalrymen legitimately determine the Army life isn't right for them or their families. Those officers deserve our thanks and any help we can give them to ease them into civilian life. Indeed, many of these former soldiers do a great job telling the Army story and helping our recruiting efforts.

In the final analysis, for all the personal reasons to stay in or depart the Army, one ideal looms large in the heart of any American who has sworn the commissioning or enlistment oath: Selfless service to our great nation. The notion of being part of something greater than ourselves motivated many of us to join the service in the first place. By any measure, we truly live in the greatest nation the world has ever seen. Certainly, we have our shortcomings. But overall, more people have more opportunities than any one of us can truly imagine. Armor officers and troopers are directly responsible for this prosperity. Your dedication and hard work make American freedom possible. We want to keep you on our winning team.

Forge the Thunderbolt and Strike First!

## LETTERS (Continued from Page 4)

The EAB is a natural progression for Armor soldiers to demonstrate branch/MOS unique skills and abilities. The added dimension of Armor combat elevates that to the CAB.

I think the Infantry branch has had it right all along, and Armor has a chance to use a tool to promote more team spirit, pride in our history and heritage, not less. Other branches are capable of determining what their needs are. MG Bell is our advocate as branch chief of Armor. I believe if the Armor community were polled on this issue, we would find an overwhelming majority of officers and enlisted support the CAB and EAB.

In closing, I would like to congratulate the *ARMOR* magazine staff on your excellent work. I appreciate the opportunity to express my views in this forum.

C. JOSEPH (JOE) ROMANS  
SGM, KSARNG  
OPS SGM 1-635 AR  
Pauline, Kan.

### Combat Badges Haven't Hurt Infantry, Combat Medic Cohesion

Dear Sir:

I was totally surprised at the stand taken by the Chief of Armor (COA), pertaining to the Combat Armor Badge (CAB), expressed in the September-October issue of *ARMOR*.

The COA states there are two overriding arguments that tell him the CAB is not right for our force. The first is the divisive nature of such an award, and the second is its impact on the overall army. Allow me to discuss these two points.

In my view, the establishment of the award would not be divisive in the Armor force and would not create a culture of "haves and have-nots" (COA term). To believe that a culture of "haves and have-nots" would be created is to believe that many in the Armor force possess an envious, petty, and jealous mentality. This I do not believe. The establishment of such an award would recognize the fact that certain members of our force met the ultimate challenge of our profession — combat. Should we withhold from these armor warriors the recognition that is due them? It is a fact that all members of any branch do not serve in combat in any war. All infantrymen, even during WWII, did not serve in combat, but they did perform other vital functions, just as many in our Armor force did not serve in combat but did perform other important duties. *By the establishment of this award, we are not penalizing those who did not go to war — we are recognizing those who did.* If the establishment of such an award would create a divisive situation and create a culture of "haves and have-nots," the Infantry and Medical Corps would have had trouble long before now.

I do not believe the establishment of this award would fragment the cohesion that exists between combat soldiers and support soldiers. The fact will always remain that

front line units are only as good as their support, but the fact also remains that the combat soldiers are the ones doing the fighting and most of the dying. There are two exceptions to this statement — the combat medics and the combat engineers. The medics have their badge; I would vote for the combat engineers to have theirs also. As to the situation where the 97B CI soldier is assigned to a scout squad, the solution is simple — build into the regulation an "exception to policy" criteria.

As to the Army becoming overcome with request for types of badges for everyone, I do not feel the COA should be concerned; this would become a CSA problem.

DONALD E. HORN  
CSM, U.S. Army (Ret.)

### Armor Soldiers in the Gulf Deserved Combat Badges, Too

Dear Sir:

I was extremely excited when I read the headline of the "Commander's Hatch" in the September-October issue — "The Combat Armor Badge." I thought to myself, finally an Armor leader willing to stand up for the branch and the soldiers who represent the branch. I was devastated by MG Bell's stance.

He mentioned two points:

It will cause divisiveness. Has this happened in the Infantry Branch between what he called the "haves and have-nots"? I think it has not. It has only added to the *esprit de corps* of that fine branch.

Impact on the Army overall? The German Wehrmacht had a combat badge for all its branches; this seemed to work well for them, and I agree any soldier should be eligible for a combat-type badge.

I cannot describe to you the feelings I had trying to answer the questions of my young

soldiers in 4-64 Armor, after they witnessed our mortars receiving their CIBs: "Sir, they didn't even fire a shot,"... "We were in front of them," etc., etc. I believe our mortarmen deserved this award, I also think our 19Ds, 19Ks, and medics also deserved a badge.

At a time when the services are facing retention and recruiting concerns, I would think another bonus in terms of a much deserved award would only help morale. I know morale is down in the Armor force; I still talk to the many friends I have on active duty, and they are not happy.

I also wonder if his stance would be different if he had been in the Gulf. I hope he becomes a leader in this issue for our well-deserved Armor veterans.

TODD A. MAYER  
Cincinnati, Ohio

### "Not Again!" Says Veteran, Warning Against the Beret

Dear Sir:

Definition:

PITH HELMET *n.* A light sun hat made from dried pith.

I will tell you up front, the pith helmet is the answer. This past summer I celebrated my 60th birthday. Once again, as in the past several summers, I did it by giving my dermatologist another chunk of money for services rendered. You see, once upon a time, I was a young man of steel (I thought). There was nothing on this earth that could hurt me. Nothing would ever hurt me. Well, I was wrong. I was worn down and hurt a little at a time until now I will hurt for the rest of my life. Here is the background on how this happened.

About 100 years ago, people were more in touch with, and had a better understanding of nature. Styles of dress were functional.

## Expert Armor Badge Under Study by OCOA

The Office of the Chief of Armor (OCA) is currently developing an Expert Armor Badge proposal. While we will go out for formal staffing in the future, we would greatly appreciate your comments during the developmental stage. Many will remember MG Bell's EMAIL earlier this year outlining his reasons for not supporting the establishment of a Combat Armor Badge. In this same EMAIL, he stated that he would consider a competency-based badge proposal. The Expert Armor Badge (EAB), developed utilizing the Expert Infantryman Badge (EIB) as a baseline, is the

OCA proposal for that competency-based badge.

By going to the Armor Center Homepage <http://knox-www.army.mil/index.stm> and clicking on the EAB ICON, the system will take you to the EAB page. There you will find an overview of the proposal and a survey form. OCA would greatly appreciate your review of the proposal and completion of the survey form.

Again, this is not a formal staffing of the proposal. However, your comments will be critical in guiding our development efforts.

## New Draft Manuals To Be Posted on the Web

The Doctrine Division of the Armor Center's Directorate of Training and Doctrine Development will post the drafts of three new field manuals tailored to the new Initial Brigade Combat Teams on a web site for inspection and comment from the force. The Armor Center has proponentcy for the mobile gun system platoon, the reconnaissance platoon, and the new *FM 17-15* cavalry manuals. In order to view the drafts and comment, you will need to

log in and obtain a password from Mrs. Bev Flavell at:

*flavellb@ftknox5-emh3.army.mil*

You will need to provide your name, rank, SSN, duty phone, and unit.

Comments on the draft manuals can be forwarded to CPT Glenn Hemminger at *Glenn.Hemminger@knox.army.mil*, or by phoning DSN 464-4097 or commercial 502-624-4097.

You could dress stylishly and yet still be practical. We were a people that knew how to dress for the weather. Women even carried umbrellas when the sun was shining. Men wore real hats — not just a little beret or a baseball cap, but a real hat with a wide brim. But then something happened to change all that.

About 60 years ago, we had a world war, and after that, attitudes all over the world changed. Somebody, somewhere, decided to become "stylish" and decided that playing in the sun was wonderful. Getting a tan was great, the more tan the better, and that the fewer clothes you wore, the more area you could tan. And that was even greater. Oh to be tan all over, to be stylish!

So we can trace back to World War II as the beginning of the big change. And it was the tough guys of the war that started all of this. If you find this hard to understand, see if

you can follow me on this: When looking at old movies or newsreels from the '20s and '30s, we see an entirely different form of dress. Men that worked out-of-doors protected themselves from the sun with long-sleeved shirts, wide-brimmed hats, long pants, and good, heavy shoes. People who were going to be outside just for pleasure were also sun-conscious and dressed accordingly, even at the beach. But after WWII, all of this changed. Men started by not wearing tops at the beach. They worked in the sun in just shorts and sandals. And some idiot even invented the bikini bathing suit for woman. After that idea was sold, it only got worse with time. My father, 82 years old, just had 31 cancers removed from his upper body. I do not even want to think about the cost, but every one of those skin cancers needed stitches. He was one of those tough guys of WWII. Of course, he passed on to his sons some very bad habits.

\* \* \* \* \*

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You are probably asking, so what is the point?

It was pre-WWII, when the Army had this wonderful headgear that the Army had adopted from the British. It was the pith helmet, the pith helmet that was light and airy and protected the wearer from the sun. After the war started, "They" decided to get stylish and did away with the pith helmet (that was light and airy and protected the wearer from the sun). They instead adopted a baseball cap that many civilians had taken to wearing. Then came the Louisville "spring-up," more baseball caps, and the absolutely stupid beret. When I was in the Army, I sure looked sharp in that old Texas desert with my black beret on. Oh boy, did I ever look sharp! No matter that my ears burnt off, or that my face took terrible punishment from the sun. I looked sharp. I was stylish.

And now... I too have skin cancer, just like my dad. He taught me well.

And now... Someone wants to bring back the stupid beret.

My great Uncle Sam let me down. Not directly, and not with malice, but with a subtle stupidity that I will suffer the consequence of for the rest of my life.

Wouldn't it be great if "They" would decide to adopt a functional headgear for once?

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## Armageddon in the East: Russia's Crucial Thrust Surprises the Nazis

**Soviet Blitzkrieg: The Battle for White Russia, 1944** by Walter S. Dunn, Jr., Lynne Rienner Publishers, Boulder, Colo., 2000, 249 pages, \$55.00, hardcover, ISBN 1-55587-880-6.

In July 1944, the Red Army launched a massive, German-style blitzkrieg attack against Hitler's Army Group Center in what was the biggest Eastern Front battle of World War II. Historian Walter Dunn now presents the fascinating details of the stunning Russian victory in *The Battle for White Russia*.

Dunn is an expert on the war on the Eastern Front. He has written two earlier historical works on the subject, *Hitler's Nemesis: The Red Army 1930-1945* and *Kursk*. Using recently declassified Soviet orders of battle, as well as German and Russian unit histories, Dunn smartly recreates the details of the planning, training, and execution of the remarkable Soviet breakthrough offensive that smashed 50 German divisions and advanced 300 kilometers in just ten days.

In early 1944, the Allies asked Stalin to conduct an offensive on the Eastern Front to coincide with the Normandy landings, in order to tie up German reserves in the east and prevent the shifting of German forces from one front to the other. Stalin eagerly complied, but his reasons, as usual, were more Machiavellian than cooperative. White Russia, occupied by the German Army Group Center, was selected for political and military reasons as the target for the Russian offensive. Stalin wanted to occupy as much territory as possible to ensure Russian hegemony in eastern Europe.

Dunn's research and presentation reveal much about the strategic position of White Russia and the geopolitical chess game Stalin played with the lives of his soldiers. Best, however, is Dunn's vivid portrayal of Russian preparations for an offensive that would hurl two million men in 180 divisions against the 800,000 Germans who defended in terrain totally unsuitable for the maneuver of huge Soviet tank armies. At least that is what the Germans thought, and their vulnerable defenses reflected that error.

The destruction of Army Group Center relied on eight elements in the Soviet plans: local superiority, deception, surprise, leadership, timing, use of terrain, training, and technology. The Soviets had learned much from the Germans and now they would use the blitzkrieg against the invaders.

Most of White Russia is swamp and dense forest, with few roads and fewer railroads. The Germans never dreamed the Russians could or would launch a major offensive in such inhospitable terrain. They incorrectly

assumed the Russians suffered from the same lack of mobility that they did. Of course, that is exactly why the Russians picked that area for their offensive. The Russian plan was so carefully drawn, so meticulous, and so successful that the Germans never suspected what awaited them in the mists and fog of the swamps and forests.

Deception, surprise, and local superiority were complete, with single German infantry regiments vainly trying to stop entire Russian tank armies. In one case, a Tiger tank battalion and an artillery battalion were sent to blunt the penetration of the whole 5th Guards Tank Army, a rather futile gesture indeed. The speed and violence of the Russian blitzkrieg crushed the defenders and sent the survivors into a rout. The few German reserves could not react fast enough to counter the onrushing waves of tanks, assault guns, artillery, and truck-mounted infantry that poured through huge gaps in the defensive lines. The German response was panicked, desperate, and hampered by indecision and bad decisions.

After ten days of amazing success, the Soviet offensive ground to a halt, but not due to any German countermoves. As usual, logistics fuels any plan and the Russians had outrun their trains. They would go no further until supplies could reach the forward units.

Dunn's work here is superb as he tells of the German and Russian generals trying to command in combat, solve problems, and make decisions with each side facing unique, fluid situations. This is a well-researched and vividly told story, both entertaining and informative, as well as containing excellent lessons for any professional officer.

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**The Korean War: No Victors, No Vanquished** by Stanley Sandler, Lexington, University Press of Kentucky, 1999, 330 pages; hardback \$42.00, paperback \$19.00.

Historian Alexander Bevin, in his book *Korea: The First War We Lost*, claimed that the United States "lost the Korean War." Nothing could be further from the truth, as Stanley Sandler asserts in *The Korean War: No Victors, No Vanquished*, his new book on this much forgotten though very important war fought immediately after World War II — a decade before the Vietnam War in 1965.

Sandler asserts that during the Korean War, there were, in fact no winners nor losers, with the result being the stand-off that still exists today. This book provides a clear,

concise, and well-balanced account of the Korean War, from its origins in the post-World War II settlements between the United States and the former USSR to the battlefields on land, on sea, and in air over North and South Korea, as well as the Red Chinese intervention. Finally, there is an account of the oftentimes tortuous peace negotiations at Panmunjon that took nearly as long to conclude as the shooting war itself.

*No Victors, No Vanquished* is chronologically written, with a brief history of the two Koreas and that peninsula's tortured history in the twentieth century, first under Japanese and later Soviet occupation. Divided at the end of World War II between the United States and the USSR, Korea unknowingly became the first test of the West's firm resolve to halt communist expansion in Asia. The detail Sandler provides on the North Korean Army's (NKPA) invasion of South Korea and the Allies' retreat to the Pusan Perimeter is well-balanced. It gives a fair assessment of all sides, and is critical of the United States Army's lack of preparedness to meet this onslaught. U.S. forces were hindered by their focus on occupation duty in Japan and the cuts in defense made by Secretary of Defense Louis Johnson. Determined to exceed President Truman's goals in cutting defense spending, Johnson virtually stripped the United States Army's combat power through his mismanagement of the Pentagon. This was, in fact, the reason cited by President Harry S. Truman for firing Johnson, a long-time political supporter and friend. There was, as we know today, sufficient blame to go around, specifically on the part of the President, for these same cutbacks in defense spending. It was Truman who claimed "The buck stops here," insofar as government spending, particularly on defense, was concerned. In any case, when the U.S. went to war, it was with a far different and weakened force than the one that defeated the Axis during World War II.

Nonetheless, when rushed to the Korean Peninsula, the U.S. Army fought a valiant rear-guard action as it attempted to slow the NKPA. The author provides a fresh interpretation of both Task Forces Smith and Kean, and their almost suicidal missions in slowing the North Koreans as they pushed ROK and U.S. forces to an ever-shrinking perimeter around the port city of Pusan. Sandler gives credit where credit has long been overdue to the bravery and the tenacity of the American soldiers who fought the NKPA during these ominous days. They bought the United Nations enough time to rush in reinforcements to strengthen the foothold that both these task forces had tenaciously held onto during the first month and a half of war. In retrospect, the author writes, "The battle for the



Pusan Perimeter was a damned close thing," that almost led to an evacuation from the Korean peninsula.

At the head of the United Nations effort was General Douglas MacArthur, who could probably share some of the blame for the Army's unpreparedness to meet the NKPA invasion. Sandler is critical of MacArthur's style of leadership and his pomposity, which sometimes clouded his ability to make sound judgments. As other recent works on the Korean War now indicate, while General MacArthur made some brilliant decisions throughout his military career, including the highly successful and daring landing at Inchon that reversed the course of the early Korean War, his style of leadership and inability to follow orders later on had "disastrous results" in the prosecution of the first eight months of the war. Sandler provides a well-balanced assessment of MacArthur's generalship during his role as commander-in-chief of all U.N. forces in Korea until his removal in April 1951 by President Truman.

Perhaps the strength of Sandler's *No Victors, No Vanquished* is the fact that it is well-balanced. It discusses all the services and is not just Army-centric. The author lavishes praise on the 1st Provisional Marine Brigade under Brigadier General Edward A. Craig, as well as the fighting abilities of the leather-necks, many of whom were reservists and veterans of World War II. Despite General MacArthur's known contempt for the Marines, a dislike that was rooted in a WWI public relations fiasco after the fighting at Belleau Wood, he nonetheless counted on their mastery of amphibious operations to launch the counterstroke at Inchon and the eventual liberation of Seoul. Sandler attributed the ability of the Marines to their commitment to training at both the basic and unit levels, as well as their battlefield leadership, which often provided the edge in battle.

The author likewise praises the airmen and the sailors who fought in Korea. He credits the air campaign with "breaking the back" of the NKPA during its long retreat northward following the breakout from the Pusan Perimeter and the simultaneous landings at Inchon.

As for the role of the U.S. and other navies, the author concludes that U.N. naval power made it possible to bring to the peninsula the troops and equipment needed to save the Republic of Korea. He argues that the very presence of such a large U.N. naval contingent possibly dissuaded the communists from challenging the many ships that sailed largely unmolested up and down the Korean coastlines. The naval force provided excellent platforms for the aircraft that provided close air support to U.S. and U.N. forces and bombarded enemy troops, railroads, and logistical bases. Ships and submarines likewise transported U.S., British, and ROK commando forces to launch devastating raids against NKPA and Chinese Communist Forces (CCF) along North Korea's coastline.

As for the roles of the Soviet Union and the People's Republic of China (PRC), Sandler provides ample evidence that Soviet dictator Josef Stalin was the real "ringmaster" of the communist war effort in the South. North Korean leader Kim Il Sung knew that Stalin would see an opportunity to challenge the United States' position in Asia and thus persuaded him that the time was ripe for an all-out offensive to unify the Korean peninsula under his rule. As for the Chinese intervention, the author provides a concise account of the PRC's decision to intervene on the side of the NKPA, which China claimed, then and now, was for "purely defensive" reasons. Sandler provides very little insight, however, into Mao's decision to go to war in October 1950. Nonetheless, he provides fair coverage of the Chinese intervention and its devastating effects on the U.N. plans for reunification of the two Koreas and its fighting withdrawal from the Chosin Reservoir in December 1950.

*No Victor, No Vanquished* likewise gives ample coverage to the U.N. and South Korean forces involved in the war, one of the best features of this book. He describes the different armies sent as part of the United Nations force, as well as the day-to-day improvements of the ROK forces as the war dragged into 1951 and 1952. The author also looks at the efforts at negotiating a cease-fire, and touches on the psychological operations war for the "hearts and minds" of all the armies involved. The Korean War was, as Sandler's book proves, a modern war in every sense of the word. The methods used here would be repeated during the United States' involvement in the Vietnam War a decade later.

Several faults warrant mention. In his attempt to tell the whole story, Sandler neglects some of the more important political aspects of the war and how they influenced the fighting. Sandler might also have included a chapter on how the Korean War changed the U.S. Army's outlook and preparation for future limited wars. And far better maps might have given the reader a better insight into the progress of the war as it dragged on. Despite these shortcomings, this book is recommended as a text for instructors in military history courses and for professional military history libraries. Sandler has taken a difficult subject and has written a very good primer on the war. This book comes highly recommended for military historians, and tells the story of an important war that is no longer forgotten.

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**Black Hawk Down: A Story of Modern War** by Mark Bowden, Penguin Books, New York; 1999, 392 pp., \$13.95, ISBN 0-14-028850-3.

The Battle of Mogadishu was one of America's least explored yet most relevant battles

in recent history, and it is given an outstanding treatment here by author Mark Bowden. The technique of weaving different perspectives within the story allows insight into tactics, character, and combat not normally found in a military history. The author realistically captures the language, morale, and lifestyles of the individual soldiers that are so familiar to anyone who has served. Perhaps what makes this account even more readable and enjoyable for anyone with a military background is the ability to imagine how easily such a situation could occur in your own unit.

Beginning with the initial air assault to capture the aides of Somali warlord Mohamed Farrah Aidid, the book introduces the men on both sides. We get to know the background and personality of each soldier, so that when a Delta Force soldier is killed, we relive it not only from the viewpoint of the soldiers around him, but also from the point of view of the Somalis doing the shooting. The book places you within the fight, and you feel a sense of loss that a friend and colleague is being killed, not just a name on a page. Not just elite soldiers are introduced here; the story of the "cook platoon" rescue convoy reminds all in uniform that all of them are primarily soldiers.

The author describes the accidents and confusion that add up to the "fog of war" so often described in historical accounts. He follows the battle from the viewpoints of numerous participants — those on the initial assault, those in the first ground convoy, the aircraft crews overhead, the men at the two helicopter crash sites, and the soldiers in several other ground convoys trying to rescue the embattled Rangers and Delta Force operators trapped in the maelstrom of the battle.

Mr. Bowden, a newspaper reporter, uses to good advantage the technique of the cross-referenced personal interview, in the style of military historian S.L.A. Marshall. But he also uses his access to devices that Marshall could have only dreamt about — recordings of the actual radio conversations and copies of the real-time video taken from overhead. Bowden ties all of these aspects together to make a near-seamless chronicle of the events. The author includes a collection of tactics, techniques, procedures, and lessons learned that should be of interest to soldiers as well as policy makers of all ranks and positions. These insights vary from those any soldier can use, such as staying away from walls in a city fight to avoid the "bullet funnel effect," to the modern day limits of military power as a foreign policy tool. Mr. Bowden's book will serve as the definitive treatise on a battle that briefly entered the world's stage only to disappear from view just as rapidly. This book provides a current battle primer that should be required reading for soldiers of all ranks and branches.

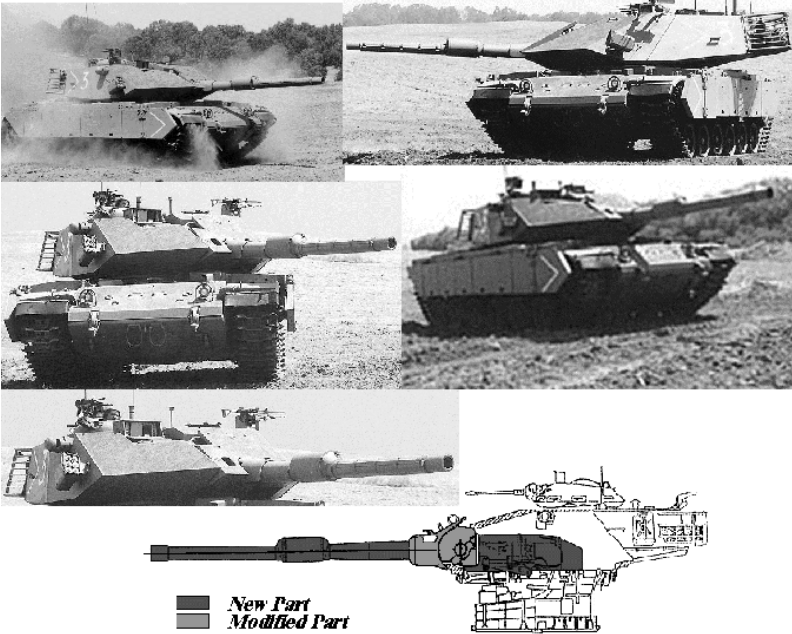
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# Sabra



## Israeli Upgraded M60A3 Main Battle Tank



A color version of this poster appears on the Threat Branch website at: [www.knox.army.mil/center/threat/intel.htm](http://www.knox.army.mil/center/threat/intel.htm).

### Characteristics

Crew Size	4	Max Road Range	450km
Combat Weight	49,895kg*	Max Road Speed	48km/h
Height (overall)	3.05m	Fording Depth (prepared)	2.40m
Length (without gun)	8.26m	Armament (main gun)	120mm
Length (gun forward)	9.40m	Armament (coaxial)	5.56/7.62mm
Width (without skirts)	3.63m	Armament (external) x2	5.56/7.62mm
		Armament (mortar)	60mm

Using countries: Israel

\*weight varies with ballistic protection configuration

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